CONSTRUCTION NEWS

PROPOSALS

For proposals Advertised see the pages immediately following the "Construction News" Section.

WATERWORKS

Bids Close			See Eng. News-Record
Jan.	3	Earlville, Ill.	Dec. 29
Jan.	3	St. Paul, Minn.	Dec. 29
Jan.	6	Phila., Pa.	Dec. 29
Jan.	11	Central Islip, N. Y. Adv. Dec. 22 and 29.	Dec. 29
Jan.	23	Madison, S. D.	Dec. 29
Jan.	31	Atlanta, Ga. Adv. Dec. 29.	Dec. 29

SEWERS

Jan.	2	Marceline, Mo.	Dec. 15
Jan.	3	Indianapolis, Ind.	Dec. 22
Jan.	3	Detroit, Mich.	Dec. 29
Jan.	4	Columbus, O.	Dec. 29
Jan.	4	Appleton, Wis.	Dec. 15
Jan.	4	Dearborn, Mich. Adv. Dec. 22 and 29.	Dec. 22
Jan.	7	Streator, Ill.	Dec. 22
Jan.	13	Milwaukee, Wis. Adv. Dec. 8 to 29.	Dec. 8
Jan.	23	Madison, S. D.	Dec. 29

WASTE DISPOSAL

Jan.	4	New Orleans, La.	Dec. 22

BRIDGES

Jan.	5	Sedgwick, Kan.	Dec. 29
Jan.	10	Lake Charles, La. Adv. Dec. 15 to 29.	Dec. 15
Jan.	10	Oklahoma	Dec. 29
Jan.	14	Bradentown, Fla.	Dec. 29
Jan.	16	Royersford, Pa. Adv. Dec. 29.	Dec. 29

RAILWAYS

Jan.	9	Ontario	Dec. 15

EXCAVATION AND DREDGING

Jan.	4	Belzoni, Miss. Adv. Dec. 15 to 29.	Dec. 15
Jan.	4	Carrollton, Mo.	Dec. 29
Jan.	6	Ivanhoe, Minn.	Dec. 29
Jan.	7	Riverton, Wyo.	Nov. 10
Jan.	7	Duluth, Minn.	Oct. 13

STREETS AND ROADS

Jan.	2	Petersburg, Ind.	Dec. 22
Jan.	3	Gaston, N. C. Adv. Dec. 29.	Dec. 29
Jan.	3	Stockton, Cal.	Dec. 15
Jan.	3	Lewisburg, W. Va.	Dec. 22
Jan.	3	Akron, O.	Dec. 22
Jan.	3	San Luis Obispo, Cal.	Dec. 22
Jan.	3	Jacksonville, Fla.	Dec. 22
Jan.	4	Florida	Dec. 15
Jan.	5	Florida	Dec. 15
Jan.	5	Jackson, Mich.	Dec. 29
Jan.	5	Virginia	Dec. 29
Jan.	6	Gladwin, Mich.	Dec. 29
Jan.	6	Marlin, Tex.	Dec. 29
Jan.	6	Denton, Tex.	Dec. 29
Jan.	9	Dallas, Tex.	Dec. 29
Jan.	9	Benton, Ill.	Dec. 29
Jan.	9	Elmhurst, Ill. Adv. Dec. 29.	Dec. 29
Jan.	10	Palatka, Fla.	Dec. 22
Jan.	10	Akron, O.	Dec. 29
Jan.	10	Bridgeton, N. J.	Dec. 29
Jan.	10	Oklahoma	Dec. 29
Jan.	10	Jasper, Tex.	Dec. 29
Jan.	10	Georgetown, Tex.	Dec. 29
Jan.	12	Wisconsin	Dec. 29
Jan.	14	Bradentown, Fla.	Dec. 29
Jan.	16	California	Dec. 29
Jan.	31	Lake Wales, Fla. Adv. Dec. 22 and 29.	Dec. 22

INDUSTRIAL WORKS

Jan.	2	Pleasantville, N. J.	Dec. 22
Jan.	3	Phila., Pa.	Dec. 22
Jan.	5	St. Louis, Mo.	Dec. 29
Jan.	7	Racine, Wis.	Dec. 29
Jan.	11	Middletown, N. Y. Adv. Dec. 22 and 29.	Dec. 22
Jan.	15	Corning, Ia.	Dec. 15
Jan.	19	Fargo, N. D.	Dec. 22

BUILDINGS

Jan.	2	New Orleans, La.	Dec. 29
Jan.	3	Butler, Ind.	Dec. 22
Jan.	4	Cleveland, O.	Dec. 29
Jan.	4	Los Angeles, Cal.	Dec. 29
Jan.	4	Frankfort, Ky.	Dec. 29
Jan.	4	Ottawa, Ont.	Dec. 29
Jan.	5	Gettysburg, Pa.	Dec. 29
Jan.	5	New York, N. Y.	Dec. 29
Jan.	5	Cookeville, Tenn.	Dec. 22
Jan.	5	Murfreesboro, Tenn.	Dec. 29
Jan.	5	New York, N. Y.	Dec. 29
Jan.	5	Nashville, Tenn.	Dec. 29
Jan.	6	Columbus, O.	Dec. 29
Jan.	6	Harrisburg, Pa.	Dec. 22
Jan.	8	Indianapolis, Ind.	Dec. 29
Jan.	10	Fayetteville, N. C.	Dec. 29
Jan.	10	Independence, Kan.	Dec. 29
Jan.	10	Marathon, Wis.	Dec. 22
Jan.	10	Manitowoc, Wis.	Dec. 22
Jan.	12	Secaucus, N. J.	Dec. 29
Jan.	17	Newcastle, Ind.	Dec. 22
Jan.	17	Institute (Sturgeon Bay P. O.), Wis.	Dec. 22
Jan.	18	Grand Rapids, Mich.	Dec. 22
Jan.	24	Grand Rapids, Mich.	Dec. 22
Jan.	24	Madison, Wis.	Dec. 22
Jan.	30	Grand Rapids, Mich.	Dec. 22
Feb.	1	Williamsport, Pa.	Sept. 8
Feb.	1	Duluth, Minn.	Oct. 27
Feb.	2	Battle Ground, Ind.	Dec. 29

MISCELLANEOUS

Jan.	3	Electroliers—Redwood City, Cal.	Dec. 15
Jan.	3	Road Machinery—Lancaster, Wis.	Dec. 29
Jan.	3	Street Signs — Minneapolis, Minn.	Dec. 29
Jan.	4	Turbo-Generator — Lincoln, Neb.	Dec. 15
Jan.	4	Railway Material—San Francisco, Cal.	Dec. 15
Jan.	4	Wharf Cranes—Rochester, N. Y. Adv. Dec. 8 to 29.	Dec. 8
Jan.	6	Station Finish — New York, N. Y.	Dec. 22
Jan.	11	Electrical Work—Buffalo, N. Y.	Dec. 22
Jan.	11	Asphalt Heating Plant—Santa Rosa, Cal.	Dec. 29
Jan.	11	Refrigeration System—Rochester, N. Y.	Dec. 22
Jan.	12	Distribution System—Watertown, S. D.	Dec. 15
Jan.	12	Terminal Sub-structure — San Francisco, Cal.	Dec. 29
Jan.	18	Station Finish — New York, N. Y.	Dec. 29
Feb.	7	Shafts and Tunnel—Jersey City, N. J.	Dec. 29

Where name of official is not given inquiries should be addressed to City Clerk, County Clerk or corresponding official.

Waterworks

PROPOSED WORK

O., Wellsville—Plans improving waterworks. $300,000. Morris-Knowles, Inc., 1200 Jones Law Bldg., Pittsburgh, engrs.

Wis., Beaver Dam—Soon takes bids, centrifugal pump with motor, in pumping station. W. A. Gergen, clk.

Ia., Moulton—Making plans waterworks. $46,000. Henningson Eng. Co., Natl. Bldg., Omaha, Neb., engrs.

S. D., Vermilion—Making plans reservoir and iron pipe line connecting present pumping plant. $30,000. J. M. Brown, Vermilion, engr.

Que., Montreal—A. E. Doucet, City Hall, dir. Pub. Wks., soon takes bids, 11,000 ft. pipe in Cremazie Blvd., $80,000; 5,000 ft. 24 in pipe in Ville Emard Ave., $90,000; 30 in. pipe in various streets, $266,000.

Ont., Sarnia—Election Jan. 2, to vote on $15,000 bonds for extending mains. Prices wanted on 6 and 8 in. c.i. mains. M. D. Stewart, clk.

BIDS DESIRED

Pa., Phila.—Jan. 6, by F. H. Caven, dir. pub. wks., furnishing and general construction of foundations for pumping station at Belmont pumping station, 8,000 lb. steel, 200 cu.yd. concrete, 500 cu.yd. excav., $25,000, high pressure steam and water pipes, exhaust lines, covering for pipe, valves, 10 in. oil separator, 3 separators, etc. $18,000; laying cable at Roxboro and Belmont pump stations, $30,000. C. E. Davis, City Hall, engr.

Ga., Atlanta — Jan. 31, by Purchasing Agent, City Hall, filter plant and reservoir. P. H. Norcross, 1405 Candler Bldg., consult. engr.; adv. this issue.

Ind., Marion—Alvord & Burdick, engrs., 8 South Dearborn St., Chicago, receiving bids altering pumping station, new 5,000,000 gal. steam pump, for city. $50,000. Noted Dec. 1.

Ill., Earlville—Jan. 3, by F. H. Smith, city clk., for double acting deep well pump driven by oil or gasoline engine. $65,000. Engineer not announced.

Minn., St. Paul—Jan. 3, by H. W. Austin, city purch. agt., 39 tons c.i. water specials, 300 coils ¾ in., 200 coils ¾ in., 50 coils 1 in., 50 coils 1¼ in. lead pipe, 1,500 lb. lead wool, 55 tons pig lead in 100 lb. pigs. O. Claussen, city engr.

S. D., Madison—Jan. 23, waterworks extensions, incl. 8,655 ft. 4-10 in. mains, 5,000 c.i. fittings, etc. $25,000. C. A. Trimmer, city engr.

BIDS RECEIVED

Mich., Monroe—For rein.-con. filtered water reservoir, from Kitchell Constr. Co., Monroe, $41,573; Duboise Constr. Co., Flint, $46,395; Realty Constr. Co., Monroe, $49,013.

Cal., Fullerton—For 240 x 320 ft. reservoir, from P. H. Ehlers, 1959 North Raymond Ave., Pasadena, $49,350; Mercereau Bridge Co., 313 North Ave. 22, Los Angeles, $49,390; Bent Bros., 1714 Eagle St., Los Angeles, $51,000. Noted Dec. 8.

CONTRACTS AWARDED

Mich., Flushing—Will extend water mains and install new pumping equipment, by day labor. $60,000. United Eng. Corp., 522 Griswold St., Detroit, engrs.

Neb., Lincoln—Furnishing one 1,000 hp. economizer, to Green Fuel Economy Co., 90 West St., New York, $16,662; 2 chain grate stokers for 500 hp. boilers, to Kent Eng. Co., Omaha, $6,917; 1 superheater for two 500 hp. boilers, to Power Specialty Co., 111 Bway., New York, $3,450; 2 soot blowers, to Diamond Power Specialty Co., Kansas City, $922; 1 centrifugal driven boiler feed pump, to C. H. Carr Mchy. Co., 411 Mutual Bldg., Kansas City, Mo., $1,286; 1 open feed water heater, to Kent Eng. Co., Omaha, $5,318; 1 hot process water softener, to International Filter Co., 38 South Dearborn St., Chicago, $3,230. Noted Dec. 1.

Wash., Yakima—For pipe line system, to Burnett & Deming, Bellingham, $181,877. Noted Dec. 1.

Cal., Redding—Pacific Gas & Electric Co., will improve reservoir, install filtration plant, re-route and install new mains, by day labor. Cost between $40,000 and $60,000. R. A. Monroe, engr.

Sewers

PROPOSED WORK

Conn., Stratford—Town plans to issue $250,000 bonds to extend sewerage system. R. K. Hunter, mgr.

Pa., McKees Rocks—See "Streets and Roads."

N. C., Hamlet—See "Streets and Roads."

O., Warren—Comrs. Trumbull Co. open bids, after Jan. 1, 4 mi. 8 in. rein.-con., 1 mi. 10-12 in. vitr. clay, ½ mi. 15 in. segmental block and ¾ mi. 10-24 in. tile sewers, Brookfield Twp. $150,000.

Mich., Northville—Plans being prepared for sewerage system incl. 50,000 ft. 8-15 in. vitr. pipe, 1,500 ft. 8-15 in. c.i. pipe, sewage treatment works, settling tank, etc. $110,00. C. W. Hubbell, 2348 Penobscot Bldg., Detroit, engr.

Mich., River Rouge—Plans being prepared 2 mi. main outlet sewer, 4-6 ft. diam., depth of cut 10 ft. $100,000. G. Jerome, 1331 Majestic Bldg., Detroit, engr.

Mich., Springwells—A. Roth, village engr. and C. W. Hubbell, consult. engr.,

Sewers (Continued)

2348 Penobscot Bldg., Detroit, opens bids about Jan. 31, concrete or brick sanitary sewers in Dix, Mulkey and Southern Aves. 5 ft. 5½ and 6 ft. in diam.

Ia., Decorah—Making plans sanitary sewerage system, incl. flushtanks, manholes and lampholes. $30,000. F. M. Hughes, clk.

Minn., Virginia—Making plans extending sewerage system, $24,661; enlarging sludge beds at purification plant, $7,500. E. F. Johnson, city engr.

Wis., Fox Lake—Plans 2 mi. sewerage system. $60,000. W. F. O'Connel, clk. Engineer not selected.

Wis., Milwaukee—Metropolitan Sewerage Comn., 221 Grand Ave., making surveys intercepting sewers to drain Milwaukee Co., 8,000 ft. 36 and 48 in. concrete pipe in Watertown Plank Rd. from 40th St. here, to City of Wauwatosa; 10,000 ft. 30 in. concrete pipe in National Ave. from Milwaukee city limits to West Allis; 400 ft. 20 in. c.i. pipe, under Milwaukee River from Lake St. on west side to east side; 4,000 ft. 30 in. concrete pipe, from east end of above syphon along Milwaukee River north to village of Whitefish Bay; 18-36 in. concrete pipe from foot of Lake St. at Milwaukee River north to North Milwaukee. $3,000,000. T. C. Hatton, City Hall, engr. Noted Nov. 10.

Wis., Milwaukee—Sewerage Comn. making plans and takes bids in spring 5,500 ft. 36 in. concrete intercepting sewer in National Ave. from 18th Ave. to city limits and 1,800 ft. of 48 in. in Becker St. from 6th Ave. to 1st Ave. $1,300,000; bids during winter for 264 sluice gates and 6 in. mud valves, also large number of gate valves in connection with sewage disposal plant on Jones Island. T. C. Hatton, City Hall, engr.

Nev., Gardnerville—Making plans sewerage system, 13,000 ft. 6-12 in. vitr. pipe, manholes, flushtanks and concrete septic tank. $30,000. L. H. Taylor & Co., 309 I. O. O. F. Bldg., Reno, engrs.

Que., Montreal—Takes bids soon for sewers in Sherbrooke St. E. from Maisoneuve to St. Jean Aves., $235,000, and from St. Jean de Dieu Ave. to Pointe Aux Trembles, $398,000. A. E. Doucet, dir. pub. wks.

Ont., London—Takes bids about Jan. 24, 6-27 in. sewer pipe for sanitary sewerage system. $300,000. H. A. Brazier, city engr.

BIDS DESIRED

S. C., Hartsville—See "Streets and Roads."

O. Columbus—Jan. 4, by R. W. Smith, clk. Franklin Co., 3 mi. 15-36 in. joint intercepting sewer in Clinton Dist. 2. $130,000. E. G. Bradbury, Gugle Bldg., engr. Noted Aug. 25.

Mich., Detroit—Jan. 3, by Dept. Purchase & Supplies, 710 Marquette Bldg., sewer pumping apparatus, incl. suction pump on standard chassis, gasoline driven. $5,000.

S. D., Madison—Jan. 23, sewer improvements, incl. 13,725 ft. 6-12 in. vitr. pipe, 216 ft. 12 in. c.i. pipe, 38 manholes, etc. $40,000. C. A. Trimmer, city engr.

BIDS RECEIVED

N. Y., Brooklyn—E. Riegelmann, boro pres., Boro Hall, opened bids Dec. 21 in (1) 83rd St., (2) Maple St., (3) Ave. S., (4) Ave. U, (5) Riverdale Ave., from Tomasetti & Co., 1133 60th St., (1) 77% of engineers estimate ($7,000), (2) 91% ($5,500), (5) 105% ($500); F. Frey, 818 Ocean Parkway, (1) 82.96%; Murphy Bros., 8856 26th Ave., (1) 84%, (2) 87½%; J. V. Timoney Co., 220 East 201st St., New York, (2) 91%, (5) 140%; G. L. Schrade, 193 Beach 108th St., Rockaway Beach, (2) 94%, (3) 81.81% ($2,000) (4) 82.37% ($2,000), (5) 124%; J. J. Guiman Contg. Co., 2314 Gravesend Ave., (3) 85%, (4) 85%; A. M. Hazell, Inc., 26 Cortlandt St., New York, (3) 92%; D. G. McDonald, (4) 81%. Noted Dec. 21.

N. Y., Long Island City—M. E. Connolly, pres. Queens Boro, Queens Subway Bldg., opened bids Dec. 20, sewer in (1) Grand St., (2) Wierfield, (3) Jefferson Ave., (4) Cooper Ave., (5) Metropolitan Ave., (6) 163rd St., (7) Haydock (20th) St., (8) Sanford Ave., (9) 96th Ave. (Windom St.), temporary dry weather flow sewer in (10) Junction Ave., reconstructing outlet at (11) Far Rockaway Disposal Plant, from J. Gallow, (1) $3,575, (5) $8,466, (6) $1,880, (10) $11,541; Peace Bros., Inc., 20 Main St., Flushing, (3) $4,686, (4) $4,864, (5) $10,916, (6) $1,816, (7) $1,677, (8) $2,788, (9) $1,752, (10) $11,761; J. F. Clancy, Inc., Long Island City, (1) $4,520, (3) $5,003, (8) $3,332, (9) $1,639; H. J. Mullin Contg. Co., Fulton St. and Twombly Pl., Jamaica, (2) $3,852, (3) $4,498, (5) $9,046, (7) $2,359, (8) $3,077, (9) $1,482, (10) $10,351, (11) $4,564; Kennedy & Smith, Inc., 93 Amity St., Flushing, (1) $3,737, (2) $3,693, (6) $1,646, (7) $2,422; J. V. Timoney Co., 200 East 201st St., New York, (2) $3,664; F. L. Paino, Woodhaven, (4) $5,841; A. Rivera, (11) $4,450; Tidus & Wright, (11) $4,508. Noted Dec. 15.

N. J., Passaic—Passaic Valley Sewerage Comrs., 128 Market St., Newurk, opened bids Dec. 20, central portion of Sect. 19, Sta. 24 plus 42 to Sta. 41 plus 00, Garfield-Wallington-Passaic Branch Intercepting Sewer, here, (1) 1,100 lin.ft. earth excav. and refill, in trench, for 42 in. concrete sewer, (2) 558 lin.ft. earth excav. and refill, in trench, for 48 in. concrete sewer, (3) 1,000 cu.yd. concrete masonry, etc., from V. Spiniello, Orange, (1) $28.60 per lin.ft., (2) $21.80, (3) $15, total, $65,654; Cenedella & Co., Milford, Mass., (1) $29, (2) $29, (3) $15), $70,032; Arnolt-More, Inc., 45 Clinton St., Newark, (1) $29, (2) $40, (3) $14, $75,520. Noted Nov. 24.

CONTRACTS AWARDED

N. Y., Long Island City—M. E. Connolly, pres. Queens Boro, Queens Subway Bldg., sewer in Waldron St., etc., to F. Gallo, 940 Crescent St., Astoria, $65,879. Noted Nov. 17.

N. C., Charlotte — Extending sewerage system, to Tucker & Laxton, Realty Bldg., $36,836; storm sewers, to Myers Constr. Co., Meridian, Miss., $54,132. Noted Nov. 3.

Minn., Minneapolis—Will extend trunk sewer in 38th Ave., N.E., to Central Ave., $60,000; in 42nd Ave., N., from Thomas to Washburn Aves., and in Washburn Ave. from 42nd to 35th Aves., $60,000; trunk sewer in Linden Hills Dist. $75,000; relief sewer in 21st Ave., N., from 6th to Colfax Ave., continuation of Minnehaha sewer, $100,000. W. C. Elsberg, city engr., C. Ilstrup, sewer engr. Work will be done by day labor.

Mo., Columbia—To C. J. McCoy Constr. Co., Emporia, Kan., for sewage disposal plant, here, incl. Imhoff tank and dosing chamber, complete, $14,500, sprinkling filter complete, $47,600, sludge filter complete, $2,000, secondary settling tank, $2,000, concrete bulkhead, $500, 5,100 cu.yd. earth excav., $1 per cu.yd., 2,166 cu.yd. rock excav., $4.50, total, $82,352; sewer mains, 1,800 lin.ft. d.s. vitr. pipe, $1.05 per lin.ft., 20,550 lin.ft. 8 in. pipue, $0.50, and 350 lin.ft. 10 in. pipe, $0.65, etc., total, $39,905. Noted Nov. 24.

Wash., Seattle—Bd. Pub. Wks. clay trunk sewer and laterals in 53rd Ave. S. W., to Scalzo & Co., 1708 22nd St., S., $95,612. Noted Nov. 17.

Bridges

PROPOSED WORK

Fla., Clearwater—State Rd. Dept., Tallahassee, takes bids about Jan. 15, Safety Harbor Bridge, 1,200 ft., 2,000 cu.yd. rein.-con., and Seminole Bridge, 1,800 ft., 2,500 cu.yd. rein.-con., Pinellas Co., $60,000 and $90,000 respectively. C. E. Burleson, co. engr., J. A. Mortland, state highway engr. Noted Dec. 1.

O., Girard—Comrs. Trumbull Co. (Warren), open bids in spring 2,000 ft. rein.-con. bridge, Liberty St., $980,000. Watson Eng. Co., 4614 Prospect St., Cleveland, engrs. Noted March 3.

Nebraska — Dept. Pub. Wks., Lincoln, takes bids late in winter, bridge over Platte River, at Brady, to have seven 50 ft. concrete arches; over Platte River, at Lisco, twelve 50 ft. concrete arches; over Platte River, at Silver Creek, twenty 50 ft. concrete arches; over Elkhorn River, at Ewing, three 70 ft. pony Pratt trusses; over Platte River, at Oshkosh, twelve 50 ft. concrete arches. G. E. Johnson, State Dept. Pub. Wks., engr.

Ill., Rockford—Winnebago Co. making plans Trask Bridge, rein.-con. and steel, 18 ft. roadway, two 5 ft. sidewalks. $50,000. A. R. Carter, Court House, engr.

Utah—Ogden—State Rd. Comn., Salt Lake City, opens bids early in 1922, rein.-con. viaduct and two 132 ft. steel bridges, 20 ft. roadways, for Union Pacific R.R., State and Federal Government. $200,000. H. C. Means, state road engr.

BIDS DESIRED

Fla., Bradentown—Jan. 14, by Comrs. Manatee Co., 40 concrete bridges, 8 to 50 ft. spans, 79 gal. iron culverts, 4 wooden trestles, length 10,000 ft., in Manatee-Osceo Dist. $100,000. McElroy Eng. Co., Gildens Bldg., Tampa, engrs. Former bids rejected. Noted Dec. 1.

Oklahoma—Jan. 10, by E. S. Alderman, state highway engr., Oklahoma City, one 28 ft. concrete girder bridge, one 210 ft. truss and two 50 ft. trusses, with concrete substructures, McCurtain Co.

Pa., Royersford—Jan. 16, by H. W. Smedley, controller Montgomery Co. Court House, Norristown, 3 span rein.-con. bridge over Schuylkill River between here and Spring City; adv. this issue.

Illinois—Dept. Pub. Wks. and Buildings, Div. Highways, Springfield, following bridges, (1) 1 concrete and substructure for steel, Route 13, Sect. 9-B, Saline Co. (2) superstructure for steel span, Route 13, Sect. 9-C, Saline Co. (3) 1 concrete and 1 steel, Route 13, Combination E, Saline Co. (4) 1 concrete and 1 substructure for steel, Route 13, Sect. 10-B, Gallatin Co. (5) superstructure for steel, Route 13, Sect. 10-C, Gallatin Co. (6) 1 concrete and 1 steel, Route 13, Combination F, Gallatin Co. (7) 3 concrete, Route 13, Sect. 11-B, Gallatin Co., (8) 5 concrete and 2 substructures for steel, Route 13, Combination G, Saline-Gallatin Co. (9) 5 concrete and 2 steel, Route 13, Combination I, Saline-Gallatin Co. (10) 2 concrete, State Aid 6, Sect F, Rock Island Co., from Thornton & Linden, Arcola, (1) $18,086 (7) $6,956 (10) $4,322. D. Jenkins, Terre Haute, Ind.: (1) $18,106, (4) $8,778, (7) $9,041, (8) $35,484. Zimmerly Bridge Co., Paris, (1) $19,994, (4) $9,998, (8) $40,000, (10) $5,435. Standard Eng. Co., Toledo, O., (2) $8,764, (5) $17,941. Rochester Bridge Co., Rochester, Ind., (2) $8,977. Clinton Bridge Wks., 101 South 2nd St., Clinton, Ia., (2) $9,057, (5) $19,964. B. F. Clarke & Sons, St. Louis, Mo., (3) $32,031, (6) $32,379. Decatur Bridge Wks., East Eldorado St. & Chicago, Illinois & Western Rd., Decatur, (5) $19,935. W. H. Shons, 109 Spring St., Freeport, (4) $11,037, (7) $510,503, M. & P. Contg. Co., Rockport, Ind., (8) $46,000. L. Weldon Co., Davenport, Ia., (9) $84,199, (10) $5,556. Noted Dec. 8.

Kan., Sedgwick—Jan. 5, by Sedgwick Co., 250 ft. rein.-con. T. girder, 5 spans, alternate two 125 ft. rainbow arch spans, for Sedgwick and Harvey Counties. $50,000. M. Roseberry, Wichita, engr. Noted Sept. 1.

BIDS RECEIVED

Tex., Del Rio—Val Verde Co. opened bids Dec. 6, 450 ft. bridge over Pecos River, (a) three 150 x 18 ft. steel spans, concrete abutments on rein.-con. piers (b) three 150 ft. steel spans, mass piers, (c) two 225 ft. steel spans on rein.-con. piers, (d) two 225 ft. steel spans on mass piers, from McCall-Moore Eng. Co., 308 Amicable Bldg., Waco, (a) $64,705, (b) $68,458, (c) $61,098, (d) $64,376; Illinois Steel Bridge Co., c/o H. K. Webb, Box 351, Dallas, (a) $72,450, (b) $84,623, (c) $69,367, (d) $73,861; J. De Puy, Bedell Bldg., San Antonio, (a) $81,632, (b) $88,898; General Constr. Co., 308 Cotton Exch. Bldg., Ft. Worth, (c) $75,892, (d) $77,615. Noted Nov. 24.

CONTRACTS AWARDED

N. Y., Buffalo—Pub. Wks. Comn., Municipal Bldg., reconstructing, renewing and protecting viaducts on Louisiana and Perry Sts., to Lackawanna Bridge Co., Bell and Abbey Sts., $76,651 and $84,615 respectively. Noted Nov. 24.

N. Y., North Tonawanda — See "Miscellaneous."

Wisconsin—State Hy. Comn., Madison, Melrose Bridge, Jackson Co., to Worden Allen Co., Port Washington Rd., Milwaukee, additional concrete in substructure no greater depth $30, additional concrete in substructure greater depth $40, less concrete substructure $12, total $44,987. Noted Dec. 1.

Kan., Topeka—Shawnee Co., to F. Luttjohann, 2101 Kansas St., Mill Dam Bridge, $19,440, Grove Bridge, $17,747, Duncan Bridge, $12,347; to Rohr & Wayland, Leavenworth, Lawton Bridge, $5,983. County Line Bridge, $7,794; to Voback & Roark, McFarlan, Nedeau Bridge, $6,091; to St. Joseph Structural Steel Co., 9th and Atchinson Sts., St. Joseph, Mo., Seward Bridge, $17,290. Noted Dec. 8.

Minn., New Ulm—State Hy. Comn., St. Paul, Bridge 3660, and Bridge 3661, over Minnesota River near here, for Brown and Nicollett Counties, City of New Ulm and State, to Illinois Steel Co., 836 Security Bldg., Minneapolis, $48,792. Noted Dec. 8.

Tex., Dallas—See "Streets and Roads."

Railways

BIDS DESIRED

California—E. Cox, vice-pres. Sugar Pine Lumber Co., 801 1st Natl. Bank Bldg., San Francisco, and pres. of Minerets & Western R.R., taking bids for all work in connection with grading 35.5 mi. standard guage railway from Fresno into timber lands, incl. grading, filling, excavating, etc., trestle construction, masonry and concrete work, 4-42 in. culvert pipe; this work is for Minerets & Western R.R., Madera, a common carrier. Balance of railway, 19.5 mi., making total of 55 mi., will be constructed for Sugar Pine Lumber Co., from end of above mentioned road into timber property. $2,500,000. T. L. Russell, Madera, ch. engr. for Minerets & Western R.R. Noted Dec. 22.

CONTRACTS AWARDED

North Carolina—Carolina & North Western R.R., Lincolnton, 3½ mi. grading from Mt. Holly to Mountain Island, to Bolton Constr. Co., Marion, $75,000.

Excavation and Dredging

PROPOSED WORK

Freight Terminals—Denison, Tex.—Missouri, Kansas & Texas Ry., Railway Bldg., St. Louis, Mo., making plans freight terminals, incl. switching yards, roundhouse, shop, storeroom, warehouse, transfer buildings, fuel oil storage tank and other buildings. F. Ringer, ch. engr. A. L. Sparks, c/o owner, archt. $3,000,000.

Ia., Toledo—Tama Co. making plans to straighten Iowa River, to drain 35,840 acres. $537,000. F. B. Ingersoll, Marshalltown, engr.

Ont., London—London Twp. plans 6, 8 and 10 in. tile drains. $25,000. F. W. Farncombe, Dominion Savings Bldg., engr.

BIDS DESIRED

Minn., Ivanhoe—Jan. 6, by Lincoln Co., Ditch 53, 62,707 cu.yd. excav. and 32,025 ft. 6-32 in. tile. $45,511. A. L. Swenson, aud.

Mo., Carrollton—Jan. 4, by Norborne D. D., 100 mi. ditch and levee work, 2,494,100 cu.yd. excav. $400,000. Elliott & Harman Eng. Co., Peoria, Ill., engrs.

BIDS RECEIVED

Cal., Los Angeles—Dredging and filling Los Angeles Harbor, San Pedro, (a) east basin, (b) west basin, from United Dredging Co., Central Bldg., (a) $0.1224 per cu. yd. complete in 7 months, $0.1184 complete in 12 months, (b) $0.126 complete in 9 months, $0.1184 complete in 12 months; Los Angeles Dredging Co., Los Angeles, (a) $0.1124, (b) $0.1989; San Francisco Bridge Co., Nevada Bank Bldg., San Francisco, (a) $0.1135, (b) $0.1435.

CONTRACTS AWARDED

Minn., Jackson—P. D. McKellar, aud. Jackson Co., drainage work in Jackson and Noble Counties, Judicial Ditch 65 and Judicial Ditch 83, to D. A. Lahart, Windom, $9,000 and $9,440 respectively; Judicial Ditch 76, tile work to P. Thompson, Windom, $106,765; Judicial Ditch 84, tile work to Nielsen & Sorensen, Worthington, $38,216. Noted Dec. 8.

Streets and Roads

PROPOSED WORK

Pa., McKees Rocks—Boro, c/o Clerk, Municipal Bldg., plans street and sewer improvements. $150,000. Engineer not selected.

Va., Portsmouth — Norfolk Co. selling $259,000 bonds improving roads. R. B. Preston, New Kirn Bldg., co. engr.

North Carolina—State Hy. Comn., Raleigh, plans clearing, grading, bridging and surfacing 21.6 mi. road from Cullowhee to Cashiers Valley, State Project 952, Jackson Co., $110,000; clearing, grading and surfacing 13.85 mi. from Andrews to Murphy, State Project 912, Cherokee Co., $60,000, 10.9 mi. from Dillsboro to Macon Co. line, State Project 953, Jackson Co., $50,000; grading and surfacing 6 mi. from Toxaway to Jackson Co. line, State Project 991, Transylvania Co., $30,000; grading, bridging and surfacing 7.3 mi. from Springdale to Transylvania Co. line, State Project 941, Haywood Co., $35,000. C. M. Upham, state highway engr.

N. C., Hamlet — Plans hardsurfacing streets in business section and installing sanitary sewers in East Hamlet. $80,000.

Fla., Fort Pierce—St. Lucie Co. plans paving 25 mi. Okeechobee-Ft. Pierce Rd., probably bituminous macadam on rock; 14 mi. Ft. Pierce-Vero Rd., bituminous macadam or asphalt on rock or cement grouted brick. $396,000. E. H. Collins, co. engr.

Fla., Titusville—Brevard Co. plans paving 6 mi. highway from Indian River City to St. Johns River, probably macadam on 8 mi. rock. $120,000.

Fla., Wauchula—Plans paving 10 mi. 10th Ave., Bay, Orange, Palmetto and Oak Sts. $200,000.

O., Akron—Voted $500,000 for resurfacing and repairing streets in 1922. E. A. Kemmler, 300 Delaware Bldg., engr.

O., Lisbon—Comrs. Columbiana Co. open bids in spring grading and brick paving 2.5 mi. Lincoln Highway, west of here, $110,000; 8.7 mi. Salineville-Wellsville Rd., $120,000; 3 mi. Unity-Youngstown Rd., $70,000; 2.5 mi. Youngstown-Lisbon Rd., Center Twp., $45,000; 7.28 mi. Hanover-Salem Rd., $70,000; 5.3 mi. Salineville-Lisbon Rd., $90,000. F. Kirk, co. engr.

Ill., Benton—Received no bids Dec. 19, grading, paving and building sewers, ½ mi. South Main St. $46,833. Will be readvertised. C. B. Mautz, city engr. Noted Dec. 8.

Ill., Bloomington—Making plans paving various streets, brick and asphalt on concrete. $250,000. E. Packard, City Hall, engr.

Ill., Durand—Bd. Local Impvts. making plans paving various streets, vitr. brick on concrete, $30,000. A. R. Carter, Court House, Rockford, engr.

Ill., Galena—Bd. Local Impvts. making plans paving, vitr. brick on concrete, and building 10 to 14 in. vitr. tile sewers in Bench St. $38,000. W. Hinn, Galena, engr.

Ill., Herrin—Plans paving streets, vitr. brick on concrete. $200,000. A. T. Pace, city council. Engineer not selected.

Ill., Marion—Plans paving various alleys, vitr. brick on concrete. $28,000. P. B. Wilson, City Hall, engr.

Ill., Rockford — Plans paving various streets, vitr. brick or asphalt on concrete. $29,000. B. C. Harvey, City Hall, engr.

Ill., Rockford—Winnebago Co. making plans paving road from Shirland to Harrison, bituminous macadam on concrete, $40,000. A. R. Carter, Court House, engr.

Ia., Tipton—Making plans resurfacing 4 blocks and paving about 75 blocks, 4,800 sq.yd. resurfacing and 55,000 sq.yd. paving. M. Tschirgi & Son, 712 Amer. Trust Bank Bldg., Cedar Rapids, engrs.

Kan., Wichita—Making plans paving, curbing and guttering Harrison Ave. from Litchfield to Porter Aves., 1,000 sq.yd. concrete, $3,000; Central Ave. from Washington to Hydraulic Aves., 7,000-8,000 sq.yd. vitr. brick, $40,000; Central Ave. from Mead to Washington Sts., 3,000 sq.yd. vitr brick, $15,000; ½ block Laura Ave. from Douglas Alley south, 600 sq.yd. asphaltic concrete, $2,500; Wichita St. from Harry to Skinner Sts., 6,000 sq.yd. asphaltic concrete, $25,000; Elk St. from Cleveland to Methewson Aves., 1,000 sq.yd. asphaltic concrete, $3,750; Hydraulic Ave. from 3rd St. to Central Ave., 2,000 sq.yd. asphalt, $8,000; 1st St. from New York Ave. to Spruce St., 6,000 sq.yd. asphaltic concrete, $22,000; Kellogg St. from Patti to Hydraulic Aves., 4,000 sq.yd. concrete, $12,000; 1st St. from Estelle to Volutia Sts., 1,000 sq.yd. asphaltic concrete, $3,750. P. L. Brockway, 155 South Emporia St., city engr.

Kan., Wichita — Sedgwick Co. making plans paving and bridging 12½ mi. North Lawrence Ave., road north to county line, 18 ft., brick or concrete, $40,000 to $50,000 per mi. (first provision may only include 4½ mi. to Kechi Rd. intersection); paving 19 mi. Cannon Ball Rd. west to county line, 18 ft., brick or concrete, incl. 2 mi. spur to Cheney, $34,000 to $44,000 per mi. M. Roseberry, co. engr.

S. D., Sioux Falls—Comrs. Minnehaha Co., making plans grading and gravel surfacing 3.5 mi. Washington Highway, Hartford Twp., and 14 mi. Colton Rd. $35,000. A. G. Risty, chn.

N. D., Wahpeton—Plans paving 10 blocks. $50,000. S. H. Murray, clk.

Mont., Bozeman—Gallatin Co. making plans improving various roads. $200,000. F. Lay, aud.

Missouri—State Hy. Dept., Jefferson City, plans 4.49 mi. road from Maryville, northward, southward and westward, State Aid Project 20.120, Nodaway Co., 56,976 cu.yd. earth excav. and 274 cu.yd. concrete masonry, etc., $37,431; 7.743 mi. road from Van Buren, northeastward, State Aid Project 20.122, Carter Co., 40,678 cu.yd. earth and 9,335 cu.yd. rock excav., 4,222 cu.yd. borrow and 227.2 cu.yd. concrete masonry, etc., $52,416. A. Graham, state highway engr.

Missouri—State Hy. Dept., Jefferson City, soon takes bids 6.693 mi. road near Oregon, State Aid Project 20.37, Holt Co. $53,870. A. C. Lingley, St. Joseph, div. engr. Noted Dec. 8.

Missouri—State Hy. Dept., Jefferson City, plans 2.244 mi. road from Mt. Sterling eastward. State Aid Project 20.124. Gasconade Co., 19,888 cu.yd. earth and 8,126 cu.yd. rock excav., 138.2 cu.yd. concrete masonry, etc. $40,231. A. Graham, state highway engr.

Mo., Carthage—City, c/o Carthage Special Rd. Dist., plans surfacing 12 mi. road from here to Jasper, concrete. $350,000. S. E. Wheeler, supt. Engineer not selected.

Tex., La Grange—Fayette Co. making plans grading, gravel surfacing and bridging 14.47 mi. State Highway 3-B, from end of present Federal Aid Project 241 to Carmine, 2,000 cu.yd. concrete, $154,000 lb. reinforcing and 61,000 lb. structural steel, 33,952 cu.yd. gravel surfacing, $147,000; 9.32 mi. Highway 3-A, from La Grange to Prairie Valley, 41,600 cu.yd. borrow and 18,235 cu.yd. earth excav., 528 cu.yd. concrete, 34,751 lb. reinforcing, 21,880 cu.yd. gravel surfacing $73,627; 15.5 mi. State Highway 3-A, on the La Grange, Rutersville, Oldenburg Rd., incl. rein.-con. bridge over Cummings Creek, 509.9 cu.yd. concrete, 131,683 lb. reinforcing, 33,995 cu.yd. gravel, $181,882. A. Schlaffi, Schulenberg, co. engr.

Idaho, Nampa—Plans grading and surfacing 32 mi. various streets, lava gravel and crushed rock; paving 19 blocks, bitulithic. $293,000.

Nev., Reno—Plans grading, paving and surfacing Belmont Rd., California, Evans and Wheeler Aves., Plumas, Chestnut, Ralston, West 2nd, East 2nd, 10th, 8th, Lake, East 6th, West, West 4th, Vine, Elm, East Mill, and Cheney Sts. 15,005 ft. type A pavement, 1½ in. asphaltic concrete on 3½ in. asphaltic concrete, asphaltic seal coat, and 10,363 ft. type B, 2 in. asphaltic concrete, asphaltic seal coat on old redressed macadam. $243,913. H. Chism, city engr.

Ontario—Dept. Pub. Highways, Toronto, plans 31.575 mi. concrete pavements, Contrs. 600, and 602-611 inclusive; 5 mi. concrete pavement, alternative asphaltic concrete, 7 in. loose stone compacted macadam base or 5 in. concrete base, 1-3-6 mix, Contr. 601; 20.25 mi. asphaltic concrete pavement, Contrs. 612-616 inclusive; 12.65 mi. bituminous penetration, Contrs. 617-620 inclusive; 9 mi. macadam road, Contrs. 621 and 622; 43.8 mi. macadam base course, Contrs. 623-630 inclusive; 44.25 mi. earth and rock work, Contrs. 640-644 and 647-650 inclusive; Cooksville subway, Bloor St. E. subway, Binkleys subway, filling in 2 spans of Belleville Prince Edward Bridge, 1,000 culverts, 300 mi. grading, Contr. 645. H. G. Hogarth, Parliament Bldgs., engr.

BIDS DESIRED

Virginia—Jan. 5, by State Hy. Comn., Richmond, paving 5.36 mi. road between Williamsburg and Lee Hall, in James City, Warwick Co., concrete, or bituminous macadam. $100,000. G. P. Coleman, state hy. comr.

N. C., Gastonia—Jan. 3, by Comrs. Gaston Co., 8 mi. hardsurfaced highway. D. L. Struthers, highway engr.; adv. this issue.

S. C., Hartsville—Jan. 5, paving and laying storm sewers in various streets, 50,000 yd. asphaltic concrete, sheet asphalt, concrete or vitr. brick, 15,000 yd. excav., 40,000 ft. curbing and 17,000 ft. storm sewers. Lee, Pennell & Murray, Sumter, engrs.

Fla., Bradentown—Jan. 14, by Comrs. Manatee Co., grading and paving 55 mi. Manatee-Oneco Rd. Dist., 250,000 cu.yd. grading, 94,000 sq.yd. asphalt and 105,000 sq.yd. shell. $250,000. McElroy Eng. Co., Giddens Bldg., Tampa, engrs. Former bids rejected. Noted Dec. 1.

O., Akron—Jan. 10, by Summit Co. grading and paving 1 mi. Copley Rd., 15,000 sq.yd. asphalt or concrete on concrete, $45,000; 5 mi. Richfield-Hudson Rd., 75,000 sq.yd. bituminous macadam, $165,000. J. Weaver, Court House, engr.

Mich., Gladwin—Jan. 6, by State Highway Dept., at office Bd. Rd. Comrs. Gladwin Co., grading and surfacing 5.516 mi. State Trunk Line Rd. 61-1, 1,615 cu.yd. excav., 51,776 sq.yd. gravel. F. F. Rodgers, Lansing, state highway comr.

Mich., Jackson—Jan. 5, by State Highway Dept. at office Bd. Rd. Comrs. Jackson Co., grading and surfacing 4.646 mi. State

Streets and Roads (Continued)

Trunk Line Rd. 14-27, Sect. A, 54,678 cu. yd. excav., 43,613 sq.yd. gravel. F. F. Rodgers, Lansing, state highway comr.

Ill., Benton—Jan. 9, paving and building sewers in ½ mi. North Main St., 5,160 cu.yd. earth excav., 7,736 sq.yd. concrete, 5,300 ft. curbing, 1,190 ft. 10-36 in. pipe. $44,190. C. B. Mautz, city engr.

Ill., Elmhurst—Jan. 9, grading, paving, curbing and building sewers. $115,000. E. Hancock, 2047 Ogden Ave., Chicago, engr.; adv. this issue.

Wisconsin—Jan. 12, by Wisconsin Hy. Comn., Madison, grading and surfacing 2,400 ft. east and west approaches to Sauk City Bridge, Sauk City, 1.4 acres clearing, 3,811 cu.yd. earth, 23,000 cu.yd. borrow excav., 29.9 cu.yd. concrete, 13,000 lb. reinforcing.

Tex., Dallas—Jan. 9, by Comrs. Dallas Co., improving 25.7 mi. Irving Cappell Rd., asphaltic macadam and gravel. $306,000. Nagle, Witt, Rollins Eng. Co., Amer. Exch. Bank Bldg., engrs.

Tex., Denton—Jan. 6 by Comrs. Denton Co., improving 10 mi. Denton-Dallas Highway, 3 in. waterbound crushed stone macadam and 1½ in. bituminous surfacing. $100,000. Bryant & Huffman, Denton, engrs.

Tex., Georgetown—Jan. 10, by F. D. Love, judge Williamson Co., grading and limestone shale surfacing 7.51. State Highway 36-B, 3,504 cu.yd. borrow, 25,564 cu.yd. roadway and 517 cu.yd. rock excav., 454.5 cu.yd. concrete, 35,707 lb. reinforcing, 12,839 cu.yd. limestone shale. $41,475. R. A. Nichols, co. engr. Noted Dec. 8.

Tex., Jasper—Jan. 10, by H. Hargrove, judge Jasper Co., grading and gravel surfacing 11.2 mi. State Highway 8, Federal Aid Project 238, 67,772 cu.yd. excav., 733.6 cu.yd. concrete, 61,567 lb. reinforcing, 23,356 cu.yd. shipped gravel to be furnished by county. $145,344. C. P. Hunter, co. engr.

Tex., Marlin—Jan. 6, by E. M. Dodson, judge Falls Co., surfacing 6.78 mi. Highway 2, through Precinct 1, 67,769 sq.yd. bituminous macadam. $50,000. G. W. Courter, co. engr.

Oklahoma—Jan. 10, by E. S. Alderman, state highway engr., Oklahoma City, surfacing and bridging Federal Aid Project 40, Sect. A, McCurtain Co., 23,375 cu.yd. earth and 31,400 cu.yd. borrow excav., 465 cu.yd. concrete, 29,455 lb. reinforcing, 18,775 cu.yd. gravel or crushed rock; Federal Aid Project 40, Sect. B, McCurtain Co., 25,838 cu.yd. earth and 40,000 cu.yd. borrow excav., 689 cu.yd. concrete, 38,950 lb. reinforcing, 24,275 cu.yd. gravel or crushed rock; Federal Aid Project 40, Sect. C, McCurtain Co., 40,651 cu.yd. earth and 86,381 cu.yd. borrow excav., 2,234 cu.yd. concrete, 107,738 lb. reinforcing, 30,721 cu.yd. gravel or crushed rock; 4.2 mi. Federal Aid Project 43, Sect. B, Rogers Co., gravel; improving 4.07 mi. Federal Aid Project 20, Sects. B-C, F-G, P-Q, Kay Co., vertical fibre brick and concrete.

California—Jan. 16, by State Hy. Dept., Sacramento, paving, 17.6 mi. highway between Whitewater and Edom, and 11.5 mi. between Edom and Indio, Riverside Co., cement concrete or asphaltic concrete. A. B. Fletcher, state highway engr.

BIDS RECEIVED

N. Y., New York — Park Bd. at office Dept. Parks, Municipal Bldg., opened bids Dec. 22, paving portions of drives in Central Park, from Asphalt Constr. Co., 208 Bway., $23,165; C. D. Beckwith, Inc., 301 West 108th St., $23,962; Cleveland Trinidad Paving Co., Flushing, $26,770. Noted Dec. 15.

N. Y., S. I., Stapleton—C. D. Van Name, pres. Richmond Boro, Boro Hall, Staten Island, opened bids Dec. 22, paving roadway in rear of new bulkhead extending from southerly end of Simonson Ave. to Arrietta St., here, from Brooklyn Manhattan Contg. Corp., 26 Court St., Brooklyn, $50,657; J. Johnson Sons, West New Brighton, $61,411; J. Meehan & Son, 74 Cortlandt, St., New York, $63,109. Noted Dec. 15.

O., Warren—E. H. Braunberns, dir. Pub. Serv. opened bids Dec. 20, (a) Sect. 1, (b) Sect. 2, (c) Sect. 3, Red Run Sewer, from F. George, 1657 Mahoning Ave., Youngstown, (a) $142,810, (b) $90,005, (c) $74,440; J. F. Casey Co., Union Ave., Pittsburgh, (a) $139,234, (b) $115,926, (c) $105,643. Noted Dec. 8.

Illinois—Dept. Pub. Wks. and Buildings, Div. Highways, Springfield, paving (1) 5.96 mi. Route 7, Sect. 3, Henry Co., (2) 1.59 mi. Route 10, Sect. 2B, Piatt Co., (3) 2.2 mi. Route 10, Sect. 32, Champaign Co., (4) 3.01 mi. Route 12, Sect. 16, Marion Co., (5) 7.22 mi. Route 15, Sect. 16, Jefferson-Wayne Co., (6) 5.59 mi. Route 15, Sect. 17, Wayne Co., (7) 4.98 mi. Route 15, Sect. 18, Wayne Co., (8) 17.79 mi. Route 15, Combination A, Jefferson-Wayne Co., (9) 6.21 mi. Route 28, Sect. 7, Henry-Bureau Co., (10) 5.68 mi. Route 28, Sect. 8, Bureau Co., (11) 11.89 mi. Route 28, Combination B, Henry-Bureau Co., (12) 5.79 mi. Route 31, Sect. 3, Adams Co., (13) 5.69 mi. Route 31, Sect. 4, Adams Co., (14) 11.48 mi. Route 31, Combination C, Adams Co., (15) 2.09 mi. State Aid 10, Sect. E, Iroquois Co.; grading (16) 7.2 mi. Route 13, Sect. 9-A, Saline Co., (17) 6.32 mi. Route 13, Sect. 10-A, Gallatin Co., (18) 19.94 mi. Route 13, Combination D, Saline-Gallatin Co., (19) 0.3 mi. Federal Aid Project 8, Sect. V-3, Macoupin Co., from J. B. Casey Eng. Co., Chicago, (1) $135,012, (9) $132,800, (10) $128,742. Central Eng. Co., 711 Putnam Bldg., Davenport, Ia., (1) $143,355. L. S. Kuhn, Bloomington, (1) $148,389. Indiana Road Paving Co., Rochester, Ind., (2) $14,424. C. W. Clarke, Clinton, Ind., (2) $16,739, (3) $28,833. W. F. Lodge, Monticello, (2) $18,116. F. A. Summers, Urbana, (3) $22,722. Barnes & Verhey, Effingham, (3) $26,076. Edwardsville Constr. Co., Edwardsville, (4) $64,861. W. C. Johnson, 510 South High St., Belleville, (4) $66,716. J. W. Etchison, Casey, (4) $70,187. Alzina Constr. Co., Springfield, (5) $161,505. (6) $119,855, (7) $110,712, (8) $374,444. (12) $132,546 (13) $118,945, (14) $242,567. W. O'Neil & Sons, Faribault, Minn., (5) $166,030, (8) $362,325. Wabash Constr. Co., Vincennes, Ind., (5) $173,315, (6) $124,113, (7) $111,843. M. Hayes & Sons, Janesville, Wis., (6) $115,297, (7) $106,705. W. F. Smith & Co., Rensselaer, Ind., (8) $380,000. White Constr. Co., St. Louis, Mo., (9) $133,346, (10) $130,333, (11) $251,134, R. F. Conway Co., 133 West Washington St., Chicago, (9) $135,614, (10) $127,001, (11) 247,170. J. J. Dunnegan, Shenandoah, Ia., (11) $234,218. Eiff & Simons, Quincy, (12) $128,977, (13) $128,064, (14) $228,920. General Constr. Co., St. Louis, Mo., (12) $131,080. C. E. Carson & Co., 155 North Clark St., Chicago, (13) $130,939. Bates & Rogers Constr. Co., 37 West Van Buren St., Chicago, (14) $245,578. H. H. McMillan & Sons, Kankakee, (15) $25,070. R. P. Devine, Watseka, (15) $26,314. M. H. Lewis, Hoopeston, (15) $29,510. L. Rich Constr. Co., 429 Missouri Ave., East St. Louis, (16) $18,548, (17) $19,323. Schweister Bros., Marion, (16) $21,537, (17) $22,749, (18) $65,162. Cameron & Joyce, Keokuk, Ia., (16) $24,616, (17) $25,197, (18) $59,612. Buis & Olsen, St. Joseph, Mo., (18) $70,904. M. R. Doyo & Co., Peoria, (19) $7,782. A. O. McCoy, Clayton, (19) $7,917. Tritt Bros., Belleville, (19) $8,431. Noted Dec. 8.

Kan., Iola—Allen Co. grading 3.016 mi. Fort Scott-Wichita Highway, 18 ft., from C. C. Baker, Humboldt, $88,793; A. R. Stinson, 1615 Boswell St., Topeka, $89,744.

Kan., Salina—Salina Co. paving 7.015 mi. Sects. C and D, Meridian Train, Federal Aid Project 45, from M. R. Amerman, Wichita, brick, $285,550, concrete, $222,539; Zeigler & Dalton, Junction City, bituminous macadam, $186,673. Noted Nov. 3.

Tex., Wharton—Wharton Co. surfacing (1) 6.4 mi. State Highway 3, from Colorado Co. east, State Aid Project 50, (2) 5.9 mi. Highway 3, from San Bernard River west, Federal Aid Project 15, (a) trap rock and asphaltic oil, or (b) uvalde rock asphalt, from Haden & Austin, 727 Kress Bldg., Houston, (1b) $89,999, (2b) $78,791; Uvalde Rock Asphalt Co., Swearingen Bldg., Antonio, (1b) $100,954, (2b) $90,703; Texas Rd. Co., Southwest Life Bldg., Dallas, Tex., (1a) $28,444, (2b) $25,818. Noted Dec. 8.

Tex., Hondo—Medina Co., (1) grading and gravel surfacing 2.85 mi. Highway 2, Meridian Highway, from Frio Co. line north east, (2) grading, gravel surfacing and bridging 10.57 mi. State Highway 2, Atasco Co. line to 1.9 mi. south of Devine, from Kuykendall & Shelton, Temple, (1) $15,676, (2) $81,153; Thomas & Harlie, Rodgers, (1) $17,593; Scarbrough, Smith & Davis, Cleburne, (1) $17,760, (2) $83,292; Rice & Winder, 1101 West 22nd St., Austin, (2) $83,884. Noted Dec. 8.

Oregon — State Hy. Dept., Portland, opened bids Dec. 15, grading 0.27 mi. Myrtle Creek Sect. Pacific Highway, Douglas Co., from H. J. Hildeburn, Roseburg, $8,422, A. B. Smith, Portland, $9,938, Joplin & Eldon, Portland, $10,108; 10 mi. Myrtle Point Bridge Sect. Coos Bay-Roseburg Highway, Coos Co., from Warren Constr. Co., Gasco Bldg., Portland, $139,[illegible] J. Hamphire Co., Grants Pass, $[illegible]; Hauser Constr. Co., Multnomah Hotel, Portland, $159,651; grading and crushed gravel surfacing 8.5 mi. Medford Agate Sect., Medford-Crater Lake Highway, Jackson Co., from W. C. Stone, 654 East Alder St., Portland, $62,957, Tobin & Pierce, Portland, $70,945, A. D. Kern, Lbr. Exch. Bldg., Portland, $77,470.

California—State Hy. Comn., Sacramento, surfacing 2.81 mi. highway between [illegible] mi. northwest of Merced to Gerard Ave., Merced Co., 3,340 ton asphaltic concrete, from Valley Paving & Constr. Co., Goldstein Bldg., Visalia, $18,303, J. A. Costello, Jr., 1083 Shotwell St., San Francisco, $22,[illegible]; 0.68 mi. highway between Tracy and 2 mi. east, San Joaquin Co., 900 ton asphaltic concrete, from J. A. Costello, Jr., 1083 Shotwell St., San Francisco, $10,485, Clark & Henery Constr. Co., 38 South Sutter St., Stockton, $11,385. Noted Dec. 1.

California—State Hy. Dept., Sacramento, grading 7.3 mi. highway between Sloat Blvd. and Sneath Rd., San Francisco and San Mateo Counties, from P. L. Burr, 512 Mission St., San Francisco, $148,778; E. B. & A. L. Stone Co., Claus Spreckels Bldg., San Francisco, $159,321; Warren Constr. Co., Journal Bldg., Portland, Ore., $170,503. Noted Dec. 8.

CONTRACTS AWARDED

Rhode Island—State Bd. Pub. Rds., Providence, 1.4 mi. Farnum Pike, Smithfield, 18 ft., bituminous macadam, to L. Carchia, Newton Highlands, Mass., $35,314. Noted Dec. 1.

N. Y., Long Island City—M. E. Connolly, pres. Queens Boro, Queens Subway Bldg., repaving 8th and 1st Aves., to Borough Asphalt Co., 1301 Metropolitan Ave., Brooklyn, $10,800 and $12,640 respectively; curbing and laying sidewalks on Pierce Ave., to F. J. Clancy, 460 Lockwood St., Astoria, $16,590. Noted Dec. 1.

Pennsylvania—State Highway Dept., Harrisburg, paving 1,483 ft. Bradford Co., 3,018 sq.yd. rein.-con., 1,426 cu.yd. excav., to R. J. DeLong, 229 9th Ave., Williamsport, $16,635; 11,497 ft. McKean Co., 23,000 cu.yd. excav., to W. J. and J. F. Gephart, 341 Pine St., Williamsport, $26,627; 2,999 ft. Cumberland Co., 1,045 cu.yd. excav., 6,028 sq.yd. rein.-con., to Burgess & Dorrier, Scottsville, Va., $24,866. Noted Oct. 6 and Dec. 1.

Pa., Pittsburgh—For grading, paving, repaving and curbing Broad St. from North Highland to Hamilton Aves., to Booth & Flinn Ltd., 1942 Forbes St., $37,000; grading, paving and curbing Baker St. from Morningside Ave. to Butler St., to T. Cronin Co., South 18th St., $40,500. Noted Dec. 15.

S. C., Florence—Mars Bluff Bridge Bd., 2 mi. road to Chitwood & Palmer, Florence, 72,000 cu.yd. grading, at $0.24 per cu.yd., 12,200 sq.yd. clay gravel surface, $0.09 plus $0.02 overhaul, 256 cu.yd. rein.con. in abutments, $0.20 plus $0.05 per lb. for reinforcement, 7,272 sq.yd. 7 in. concrete pavement, $2.95, 3,300 sq.yd. 4 in. concrete pavement on shoulders, $1, etc., total $79,000. Noted Dec. 1.

Fla., Hollywood — Hollywood Land & Water Co., Miami, will pave 2 mi. Hollywood Blvd., 92 ft. wide, 3 in. asphalt on 8 in. rock and concrete, incl. 4 mi. concrete curbing and 4 mi. concrete sidewalks, 14 ft. wide. $200,000. Work will be done by day labor.

Mich., Lapeer—State Hy. Dept. at office Bd. Rd. Comrs. Lapeer Co., grading and surfacing 7.515 mi. State Trunk Line Rd. 53-4 Sect. B to J; Decher, Rogers. Work involves 58,809 cu.yd. excav., $0.40, 554.3 cu.yd. concrete, $18, 70,544 sq.yd. gravel, $0.46. Total $70,420. Noted Dec. 1.

Ill., Murphysboro—Paving streets in Dist. 15, bituminous macadam on concrete, to Southern Illinois Quarry & Constr. Co., Murphysboro, $60,000.

Ill., Pekin—Tazewell Co., paving various streets, to McElwell & Rogy, 1937 Lincoln Ave., Peoria, $100,000.

Wis., Madison — Wisconsin Hy. Comn., Madison, grading and concrete surfacing Peshtigo-Marinette Rd., Federal Aid Project 259, Marinette Co., to W. E. Ule, Stevens Point, $110,006 Noted Dec. 22.

Minnesota—State Hy. Comn., St. Paul, gravel surfacing State Project 28-26, Federal Aid Project 240, Big Stone Co. State Projects 7-21 and 60-21, Federal Aid Project 216, Blue Earth Co., State Project 9-22, Federal Aid Project 228, Martin Co.,

Streets and Roads (Continued)

to C. F. Sculley Equipment Co., 300 Dakota Bldg., St. Paul, and Connolly Contg. Co., 427 Rice St., St. Paul, $64,616, $27,669 and $23,159, respectively; State Project 18-21, Federal Aid Project 217, Sherburne Co., to Winston Bros. Co., 801 Globe Bldg., Minneapolis, $16,753; State Project 10-23, Federal Aid Project 210, Meeker Co., to C. Weaver, Anoka, $17,867; State Project 6-26; Federal Aid Project 161-A, Wilkin Co., to Miller Constr. Co., Grain Exch. Bldg., Sioux City, Ia., $16,151; State Project 8-24, Federal Aid Project 237, Itasca Co., Div. A to Northern Road & Constr. Co., 2214 Sheridan Ave., N., Minneapolis, $19,897, Div. B, to Floan-Sundstrom Co., Hibbing, $7,564; State Project 8-25, Federal Aid Project 57, Beltrami Co., to Campbell Equipment Co., 230 Oak Grove St., Minneapolis, $16,840; State Project 10-22, Federal Aid Project 211, Swift, Pope and Stevens Counties, to Dobbleman & Rasmussen, 4232 Colfax Ave., S., Minneapolis, $20,066; State Project 21-22, Federal Aid Project 119-A, Le Sueur Co., to S. J. Peterson, 300 West Lake St., Minneapolis, $14,430. Noted Dec. 8.

Minnesota—State Hy. Comn., St. Paul, State Project 35-21, Federal Aid Project 245, Aitkin Co., to Winston Bros. Co., 801 Globe Bldg., Minneapolis, $54,706; State Projects 23-21, Federal Aid Project 234, and State Project 23-22, Federal Aid Project 243, Benton Co., to Wilkins & Pettijohn, Park Rapids, $33,910 and $37,927 respectively; State Project 65-21 and 8-26, Federal Aid Project 248, Clearwater Co., grading to Winston Bros. Co., 801 Globe Bldg., Minneapolis, $93,464, culverts to M. W. Barnard & Son, Globe Bldg., Minneapolis, $19,747; State Project 7-29, Federal Aid Project 247, Blue Earth Co., to J. Brown, Madison Lake, $14,501; State Project 28-23, Federal Aid Project 246, Pope and Stearns Counties, excavation to Jorgenson Constr. Co., Summit, S. D., $44,186, culverts to Morris Constr. Co., Morris, $13,724; State Project 9,25, Federal Aid Project 244, Fillmore Co., to Guthrie & Co., Inc., 366 Jackson St., $52,575. Noted Dec. 8 and 15.

Minnesota—State Hy. Comn., St. Paul, gravel surfacing State Project 28-28, Federal Aid Project 205, Todd Co., to S. J. Peterson, 300 West Lake St., Minneapolis, $19,910; State Project 28-21, Federal Aid Project 209, Stearns Co., and State Project 3022, Federal Aid Project 117, Mahnomen Co., to Dobbleman & Rasmussen, 4232 Colfax Ave., S., Minneapolis, $2,795 and $41,067, respectively; State Project 9-23, Sect. B, Federal Aid Project 224, Jackson Co., and State Project 3-24, Federal Aid Project 218, Wabasha Co., to Gatxmeier & Co., 5120 Upton Ave., S., Minneapolis, $14,086 and $16,591 respectively; State Project 2-25, Federal Aid Project 242, Cass Co., to G. W. Kinney, Foley, $8,539; paving State Project 1-21, Federal Aid Project 212, Dakota Co., to Butler Bros. Bldg. Co., Hamm Bldg., St. Paul, $2.26 per sq.yd. for concrete paving, $0.40 per cu.yd. for grading and $0.02 for overhaul, total $630,542. Noted Dec. 8.

Kan., Atchinson—Bd. Comrs. Atchinson Co., grading 6.212 mi. Sect. A, Federal Aid Project 100, to E. P. Olson, 2901 Monterey St., St. Joseph, Mo., $31,976; culverts on Sect. A and bridges on Sect. B, to Collins & Collins, Atchinson, $15,399 and $18,804 respectively.

Mo., Carthage—Grading and paving with 7 in. concrete, Garrison Ave. to Carterville Constr. Co., Carterville, $2.79 per sq.yd.; Main St., to Baker & Koontz, $2.65.

Tex., Dallas — Dallas Co., paving with asphalt macadam and gravel surfacing 12.5 mi. Preston Rd., to Miller Constr. Co., Sioux City, Ia.; bridges to A. Jackson, 424 Spring Ave. Total $207,581. Noted Dec. 8.

Tex., Denton—Denton Co. paving 8.54 mi. Denton-Sherman Rd., 512.36 cu.yd. concrete, 155,378 lb. structural and 29,208 lb. reinforcing steel, 9,885 sq.yd. concrete pavement, to Denton Constr. Co., Denton, $34,340. Noted Dec. 15.

Tex., Greenville—Hunt Co. grading, surfacing and bridging 9.66 mi. State Highway 1, Federal Aid Project 188, to Bd. of Permanent Rd. Comrs. of Hunt Co., c/o A. D. Duck, supt. construction, $231,289. Noted Nov. 24.

Oregon—State Hy. Dept., Portland, grading 18.1 mi. Elgin Sect. La Grande Enterprise Highway, Union Co., to Union Co. Court, La Grande, $67,610.

Washington—State Hy. Comn., Olympia, clearing, grading and surfacing 3 mi. Navy Yard Highway from Tidewater Creek to Charleston, Kitsap Co., to F. Morgan, Buckley, $79,584; 9 mi. Olympic Highway between Beaver and Forks, Clallam Co., to Reinseth & Co., Everett, $70,752; 3 mi. North Bank Highway from Crooks to Underwood, Skamania Co., to H. Pederson, Alaska Bldg., Seattle, $54,538; clearing and grading 2 mi. Ocean Beach Highway from Nasel to Johnson's Landing, Pacific Co., to Bentalla & Appletree, $26,138. Noted Dec. 1.

Wash., Morton—Paving 5 blocks in business section, 6,915 sq.yd. concrete, to J. H. Collins, Morton, $34,400. Noted Dec. 1.

Cal., El Centro—Bd. Supervs. Imperial Co., paving Brawley-Holtville Rd., Imperial-Holtville Rd., Bramley-Holtville Rd. north, Imperial Ave., and Holtville-Bonds Corner Rd., to H. H. Peterson, Loma Portal, San Diego, $184,520.

Industrial Works

PROPOSED WORK

Mass., Boston — Blodgett, Ordway & Webber, 100 Kingston St., having plans prepared by Blackall, Clapp & Whittemore, archts., 20 Beacon St., 5 story warehouse, brick, concrete foundation, Harrison Ave. $225,000.

Conn., South Norwalk—Norwalk Box Co., North Main and Ann Sts., having plans prepared by Fletcher-Thompson, Inc., engrs., and archts., 542 Fairfield Ave., Bridgeport 4 story, 60x180 ft., brick factory, North Main St. $100,000.

N. Y., Hornell—Dairymen's League plans milk condensing plant. $200,000.

N. Y., New York—F. M. Schildwater, c/o Koch & Wagner, archts. and engrs., 32 Court St., Brooklyn, having plans prepared ice plant, brick, steel and concrete, plain foundation, Webster Ave. and 174th St., here. $750,000.

N. Y., New York—U-Need Ice Co., 2050 Amsterdam Ave., soon takes bids ice plant, brick, concrete and steel, plain foundation, Inwood Ave. $250,000. Koch & Wagner, 32 Court St., Brooklyn, archts. and engrs.

N. J., West Hoboken—J. Keavy, 357 Palisade Ave., had plans prepared by McDermont & Binda, archts., 582 Bergenline Ave., and takes bids in about 2 weeks, 1 story, 75x100 ft., brick garage, Malone St. $42,000.

Pa., Philadelphia — Phila. Steamheat & Eng. Co., Juniper and Cherry Sts., having plans prepared and takes bids early in spring, 2 story, 57 x 120 ft., brick and steel shop and office building, plain foundation, 3316-3320 Lancaster Ave. $60,000.

D. C., Washington—R. Nash having plans prepared by N. S. Prager, archt., 1930 Kearney St., N. E., 3 story, storage warehouse, concrete, brick and hollow tile. $150,000.

O., Cleveland—Specialty Mfg. Co., 11414 Madison Ave., plans 2 story, brick and steel factory, plain foundation. $50,000. Architect not selected.

O., Dayton—Terminal Cold Storage & Ice Co. having plans prepared by G. B. Bright Co., archts., 103 Marquette Bldg., Detroit, Mich., 8 story, 135 x 150 ft. refrigerating and cold storage plant, rein.-con. and brick, Eaker and Ludlow Sts. $500,000. H. J. Brenner, c/o B. & C. Baking Co., 233 Clinton St., pres.

O., Lakewood (Cleveland, P. O.) H. Kaplan, 2016 Marlowe Ave., plans 1 story, brick and timber garage, plain foundation, Madison Ave. near Marlowe Ave. $40,000. Private plans.

Ind., Indianapolis — Citizens Gas Co., South Pennsylvania and Maryland Sts., having plans prepared coke screening plant, concrete, brick and steel, Prospect St. $40,000. Private plans.

Ind., South Bend—Twentieth Century Garage, 121 South Lafayette St. having plans prepared by Austin & Shambleau, archts., 111 North Lafayette St., 2 story, 60x160 ft., brick, steel and terra cotta garage. $150,000.

Mich., Grand Rapids—Buick Sales Co. having plans prepared by Osgood & Osgood, archts., Grand Rapids, 3 story, 70 x 160 ft. brick and steel garage and sales building. $75,000. W. H. Adams, Campau, Bldg., Detroit, engr.

Mich., St. Joseph—Davidson & Weiss, archts., 53 West Jackson Blvd., Chicago, preparing plans and soon takes bids, two 1 story, 80 x 325 ft. and 80 x 162 ft. additions to factory, brick and wood, for Auto Specialty Mfg. Co. $100,000.

Ill. Charleston—Clover Leaf Produce Co., c/o M. Unler, mgr., plans 1 story, 100 x 150 ft. factory, brick and steel, here. $55,000. Architect not selected.

Ill., Harvey—Ongalls, Sheppard Div. of Wyman Gordon Co., having plans prepared for brick, steel and rein.-con. power house. $100,000. H. Johnson, c/o owner, engr.

Ill., Kankakee—Lockwood, Green & Co., archts., 38 South Dearborn St., Chicago, soon take bids, 3 story, 50 x 80 ft., rein.-con. factory, for Paramont Knitting Co., 337 West Madison St. $50,000.

Ill., Rockford — Peterson & Johnson, archts., 406 Swedish Amer. Bank Bldg., preparing plans 4 story, 128x211 ft., factory, brick, stone and steel. $135,000. Owners name withheld.

Ill., Sterling—Sterling Canning Co., c/o C. W. Sauers, pres., plans 2 story cannery, brick and steel. $45,000. Architect not selected.

Wis., Antigo—C. W. Fish Lumber Co., Elcho, having plans prepared 1 story, 60x75 ft. mill, rein.-con. and brick, here. $45,000. Private plans.

Wis., Chippewa Falls—Chippewa Wood Mfg. Co. having plans prepared 2 story, 50 x 95 ft., rein.-con., brick and steel factory, plain foundation. $65,000. F. Sterzik, mgr. Private plans.

Wis., Chippewa Falls—F. Sterzik, pres. Natl. Toy & Tinsel Co., 16th and Hamilton Sts., Manitowoc, having plans prepared 2 story, 52x76 ft., rein.-con., brick and steel factory, here. $50,000. Private plans.

Wis., Madison—Ellwood Tractor Mfg. Co., c/o W. S. Heddles, Assn. of Commerce, Cantwell Bldg., having plans prepared 2 story, 60 x 150 ft., rein.-con., brick and steel factory, plain foundation. $50,000. Private plans.

Wis., Madison—Universal Grocery Co., 113 South Webster St., plans 4 story, 70 x 200 ft., rein.-con., brick and steel warehouse, plain foundation. $150,000. R. H. Hammel, pres. Architect not selected.

Wis., Oconto Falls—Falls Mfg. Co. having plans prepared 1 story, 60 x 200 ft. paper mill, rein.-con., brick and steel, plain foundation. $150,000 Private plans. D. G. Moon, Marinette, engr.

Wis., Orfordville—O. A. Roen plans 1 story, 50 x 90 ft., rein.-con., brick and steel machine shop, plain foundation. $45,000. Architect not selected.

Wis., Oshkosh—F. E. Zuelke, 238 Waugoo St., having plans prepared by Auler & Jensen, archts., F. R. A. Bldg., 2 story, 50 x 54 ft. ice cream factory, rein.-con., brick and steel, Main St. $40,000.

Mo., St. Louis—C. Ulman, 4550 Lindell Ave., having plans prepared by P. J. Bradshaw, archt., International Life Bldg., 1 story, brick and steel garage, 221 York Ave. $40,000.

Cal., Burbank—C. F. Braun Co., 604 Mission St., San Francisco, having plans prepared foundries and machine shops, brick, steel, glass and heavy mill, here. $400,000. Private plans.

Cal., Fresno—W. P. Fuller Paint Co. having plans prepared by E. Mathewson, archt., Cory Bldg., 145 x 244 ft. plant. $100,000. H. J. Brunnier, Sharon Bldg., San Fancisco, engr.

BIDS DESIRED

Ill., Chicago—Western Fixtures Mfg. Co., 3039 Elston Ave., receiving bids 1 story, 80 x 119 ft., addition to factory, mill construction, 3033-3037 Elston Ave. $40,000. S. V. Ablamovitcz, 2937 North Talman Ave., archt.

Wis., Racine—Jan. 7, by E. L. M. Tire Co., Deane Blvd. and R.R. tracks, 2 story, 80 x 130 ft. brick and timber addition to factory, plain foundation, Deane Blvd. Private plans.

Mo., St. Louis—Jan. 5, by P. J. Bradshaw, archt., International Life Bldg., 1 story, brick and steel garage, 221 York Ave., for C. Ulman, 4550 Lindell Ave. $40,000. Noted Dec. 22.

Cal., San Francisco—O'Brien Bros., Inc., archts., 240 Montgomery St., receiving bids 1 story, rein.-con. garage, Jones St., for R. W. Kern, 1329 Sacramento St. $40,000.

BIDS RECEIVED

N. Y., Marcy — State Hospital Comn., Albany, opened bids Dec. 21, kitchen and cold storage building, for acute patients at Marcy State Hospital, here, construction, from A. J. Burgess Co., Utica, $130,970, Shane Constr. Co., 302 Herald Bldg., Syracuse, $155,744, R. Richards & Son, 246 Elizabeth St., Utica, $166,500; refrigeration, from Carbondale Co., 175 Christopher St., New York, $33,485. Noted Dec. 8.

Industrial Works (Continued)

Wis., Wauwatosa — Milwaukee Co. Bd. Trustees, 2 story, 87 x 154 ft., storage plant, brick, plain foundation, Watertown Plank Rd., from Jahns & Knuth, 1915 Chestnut St., Milwaukee, $77,500; W. F. Tubesing, 130 Chestnut St., Wauwatosa, $87,000; P. W. Bringe, 940 3rd St., Milwaukee, $99,892.

CONTRACTS AWARDED

N. J. Jersey City—Erie R.R., 50 Church St., New York, 1 story, 23 stall, brick and steel roundhouse, plain foundation, incl. machine shop and boiler house, Pavonia Ave., here, to Austin Co., Bulletin Bldg., Phila., $75,000.

Pa, Philadelphia — Grubnau Bros., 114 Arch St., 1 story, 76 x 205 ft. rein.-con., brick and steel factory, plain foundation, 2nd and Erie Aves., to Austin Co., Bulletin Bldg., $40,000.

O., Cleveland—M. Marmorstein, Ullmer Bldg., 2 story, 68 x 195 ft., brick, steel and concrete garage and commercial building, plain foundation, 2500 Euclid Ave., to A. A. Lane Constr. Co., 1869 East 55th St., $75,000.

Ind., Mishawaka—Mishawaca Woolen Co., 6 story, 76 x 105 ft., brick warehouse, to G. H. Christman Constr. Co., 302 Union Trust Bldg., South Bend, $500,000.

Ill., Chicago — Newhouse & Bernham, archts., 4630 Prairie Ave., 1 story, 101 x 180 ft. garage, brick and steel, 5018 Cottage Grove Ave., to A. T. Herlin, 6117 Evans Ave., for H. Salvat, 5322 Harper Ave. $50,000. Noted Sept. 15.

Ill., Chicago—See "Building."

Ill., Chicago — Dubow Glove Co., 1911 Milwaukee Ave., 3 story, 35 x 45 ft. factory addition, brick, at 1915 Milwaukee Ave., to Fish & Wasserstrum, c/o Ludgin & Leviton, archts., 53 West Jackson Blvd., $40,000.

Ill., Kankakee—Paramount Knitting Co., 377 West Madison St., Chicago, 2 story, 50 x 80 ft. factory addition, brick and wood, plain foundation, here, to Hutter Constr. Co., Western Ave., Fond du Lac, Wis., $40,000.

Ill., Rock Island—Rock Island Transfer & Storage Co., 4 story, 75 x 100 ft., rein.-con. warehouse, 1st and 17th Sts., to P. H. Lorenz, 506 15th St., Moline, $150,000. Noted Nov. 24.

Ill., Rockford—Hess & Hopkins Leather Co., c/o F. L. Morgan, secy., 1 story, 80x 115 ft. tannery, brick and steel, by day labor. $40,000. Noted Dec. 22.

Wis., Appleton — Standard Oil Co., 68 Wisconsin St., Milwaukee, 2 story, 50 x 72 ft., brick and concrete warehouse, plain foundation, here, to Brun Constr. Co., 387 Clinton St., Milwaukee, $40,000.

Wis., Hortonville—W. L. Schroeder will build 1 story, 50 x 120 ft. rein.-con., brick and steel factory, plain foundation, by day labor. $50,000.

Wis., Neenah—Tri City Nash Co., c/o G. Sande, 110 North Church St., 55 x 150 ft., rein.-con., brick and steel garage, plain foundation, Commercial St., to L. P. Nielsen, 408 Isabella St., $60,000. Noted Dec. 1.

Wis., Wauwatosa—Modern Builders, Inc., Spring Ave. and Vliet St., will build 1 and 2 story, 40 x 100 ft., rein.-con., brick and steel factory, by day labor. $50,000.

Kan., Topeka — Seymour Packing Co., 200-202 North Kansas St., 3 story, 50 x 150 ft. rein.-con., brick and stone plant, to F. M. Spencer & Son, Mulvane Bldg., $150,000.

Kan., Wichita—Wichita Ice & Storage Co., 213 South Rock Island Ave., 5 story, 75 x 90 ft. rein.-con. and brick plant, to H. I. Ellis Constr. Co., 927 North St. Francis Ave., $200,000. Noted Nov. 3.

Mo., St. Louis — C. Remabecker, 4263 Juniata Ave., 1 story, 120 x 160 ft., brick, steel and terra cotta garage, Chippewa and Nebraska Aves., to Fisher Bros., Grand Ave. and Meramec St., $50,000. Noted Dec. 8.

Cal., Los Angeles—California Telephone Co., 1 story, 250 x 250 ft., brick, garage, 9th and San Pedro Sts., to W. Crowell, 902 South Alvarado St., $115,450.

Buildings

PROPOSED WORK

Mass., Northampton—Theatre and Store —Goldstein Bros., Bridge St., Springfield, having plans prepared by Mowll & Rand, archts., 50 Bromfield St., Boston, 1 story, 100 x 130 ft., brick, steel and concrete, King St., here. $150,000.

Mass., West Springfield—High School—Plans 3 story brick, Elm St. $350,000. H. K. Chandler, 76 Bliss St., chn. of com. Architect not selected.

Conn., Bristol—St. Josephs Church, South Main St., plans 1 story, brick and stone. $150,000. Architect not selected.

Conn., Hartford—Store and Auditorium —M. M. Kupperstein, 26 State St., having plans prepared by Berenson & Moses, archts., 1026 Main St., 2½ story, 80 x 110 ft., rein.-con. and brick, Capitol Ave.

Conn., West Haven—High School—School Comrs. having plans prepared by R. W. Foote, archt., 185 Church St., New Haven, 3 story, brick, Campbell Ave. $350,000.

N. Y., Astoria (Long Island City P. O.)—Apartment—A. J. Oliva, 717 Crescent St., plans 6 story, Jamaica and 4th Aves. $350,000. Architect not selected.

N. Y., Brooklyn — Apartment — Trieb Building Co., c/c M. A. Cantor, archt. and engr., 371 Fulton St., having plans prepared 4 story, 100 x 100 ft., brick, steel and stone, plain foundation, Bedford Ave. and Farragut Rd. $150,000.

N. Y., Brooklyn—School—Bd. Educ., 500 Park Ave., New York, having plans prepared by C. B. J. Snyder, archt. and engr. Municipal Bldg., New York, P. S. 188, 5 story, brick, steel and stone, plain foundation, Neptune Ave. and 33rd St., here. $750,000.

N. Y., Buffalo—School—Mt. St. Joseph Academy, 2064 Main St., having planss prepared by H. L. Spann, archt., 52 West Chippewa St., 2 story, 90 x 150 ft., rein.-con. and brick, Humboldt Parkway. $250,000.

N. Y., New York—Apartment—Accidental Holding Co., 123 William St., plans 5 story, 80 x 180 ft., Andrews Ave. and 179th St. N. Wilson, pres. Architect not selected.

N. Y., New York—Apartment—Margon & Glaser, archts. and engrs., 2806 3rd Ave., prepared plans 5 story 90 x 110 ft., brick, steel and stone, plain foundation, West 197th St. $200,000. Owners name withheld.

N. Y., New York—Apartment—Margon & Glaser, archts. and engrs., 2806 3rd Ave., prepared plans 5 story, brick, steel and stone, plain foundation, 230th St. and Kingsbridge Rd. $450,000. Owners name withheld.

N. Y., New York — High School—Bd. Educ., 500 Park Ave., plans 5 story, brick, steel and stone, plain foundation, 2nd Ave. and 67th St. $1,000,000. C. B. J. Snyder, Municipal Bldg., archt. and engr.

N. Y., New York — High School — Bd. Educ., 500 Park Ave., having plans prepared by C. B. J. Snyder, archt. and engr., Municipal Bldg., brick, steel and stone, plain foundation, Amsterdam Ave. and 183rd St. $300,000.

N. Y., New York—School—Bd. Educ., 500 Park Ave., soon takes bids P. S. 139, brick, steel and stone, plain foundation, 139th St. and Lenox Ave. $850,000. C. B. J. Snyder, Municipal Bldg., archt. and engr.

N. Y., New York—Show Room and Office —Eighteen Forty One Bway. Realty Co., c/o B. H. and C. N. Whinston, archts. and engrs., 2 Columbus Circle, soon takes bids brick, steel and stone, plain foundation, Bway. and 60th St. $350,000.

N. Y., Rochester—Y. M. C. A., Gibbs St., plans 2 story, 130 x 140 ft., brick, Arnett Blvd. and Kenwood Ave., also 2 story, 86 x 120 x 140 ft., brick, Monroe Ave. $100,000 each. Architect not selected.

N. J., Newark—Synagogue—B'nai Abraham Synagogue, c/o N. Myers, archt. and engr., 7 Nelson Pl., soon lets contract brick and stone synagogue and social center, plain foundation, Clinton Ave. $650,000.

N. J., Paulsboro—School—Bd. Educ., c/o P. Miller, pres., Gibbstown, having plans prepared by J. I. Bright, archt., Otis Bldg., Philadelphia, 2 story, 16 room, here. $150,000.

Pa., Johnstown — Store—J. Thomas & Sons plan 4 story, 80 x 120 ft., concrete, brick and steel, Franklin St. $200,000.

Pa., York—High School—School Bd., c/o C. M. Crider, having plans prepared by Hamme & Whitman, archts., City Bank Bldg., York, and J. I. Bright, associated archt., Otis Bldg., Phila., 3 story, 235 x 245 ft. rein.-con., brick and steel, plain foundation, Beaver and College Sts. $350,000.

Pa., South Fork — Bank — First Natl. Bank, plans 3 story, 70 x 80 ft. brick, steel and stone, Maple and Main Sts. $150,000.

D. C., Wash.—Office—F. H. Smith Co., takes bids about Jan. 15, 10 story, limestone, at 815 15th St., N.W. $900,000. J. H. DeSibour, Hibbs Bldg., archts.

Va., Virginia Beach—Hospital and Sanitarium—Bybees Natl. Chiropractic Sanitarium and Institute having plans prepared by P. B. Moser, archt., Dickson Bldg., Norfolk, 6 story, 100 x 125 ft., terra cotta, brick and steel. Waterfront St. $300,000. H. R. Bybee, pres.

W. Va., Charleston—High School—Bd. Educ. had plans prepared 3 story, brick and stone, Ruffner Ave. $200,000. Warne, Tucker & Patterson, Charleston, archts.

W. Va., Clarksburg — Hotel — Waldo Hotel opens bids about June 1, 3 story brick addition. $500,000. Holmboe & Pogue, c/o owner, archt.

N. C., High Point — Municipal—Plans municipal building. $150,000. J. W. Hedrick, mayor. Architect not selected.

Fla., Daytona—Hospital—G. N. Rigby, C. C. Bohannon and associates plan hospital and sanitarium. $500,000.

Fla., Miami — Court House—Dade Co. plans rein.-con. and steel. $200,000. H. Crabtree, co. engr.

Ala., Anniston — School—Barber Industrial School for Girls, c/o J. F. Sherer, soon takes bids 4 story, 115 x 180 ft., brick, stone and steel, plain foundation. $250,000. T. Stephens, Temple Bldg., Camden, N. J., archt.

O., Cincinnati — High School—Kunz & Beck, archts., 22 Carew Bldg., opens bids about March 1, 3 story, 72 x 120 ft., rein.-con., brick and steel, Iliff Ave., for Catholic Parish. $200,000. W. Schmidt, pastor.

O., Cleveland—Apartment—A. Land, 1935 Euclid Ave., having plans prepared by J. M. Miller, archt., 1935 Euclid Ave., 3 story, brick and steel, plain foundation, southwest corner Coventry Rd and Hampshire Lane. $175,000.

O., Cleveland—Commercial—L. W. Kelly, Hippodrome Bldg., plans brick and steel, plain foundation, on lot 116 x 185 ft., on Bolivar Rd. and East 14th St. $150,000. Architect not selected.

O., Cleveland—Commercial—F. Stein, 2195 East 93rd St., having plans prepared by A. F. Janowitz, archt., Permanent Bldg., 1 story, 50x230 ft., brick and timber, plain foundation, 8511 Lorain Ave. $150,000.

O., Cleveland—Commercial and Theatre —Utica Realty Co., c/o G. A. Ebeling, archt., 602 Newman-Stern Bldg., having plans prepared 2 story, 50 x 150 ft., brick, steel and concrete, plain foundation, 1773 East 55th St. $150,000.

O., Columbus—Dormitory—Westminster Foundation Presbyterian Church, having preliminary sketches made for mens dormitory, Nell Ave. $150,000. Address M. Breeze, 80½ North High St. Architect not selected.

O., Columbus—Home—R. L. Wirtz, 2028 Iuka Ave., having sketches made 3 story home for Builders and Traders Exch. $200,000.

O., Sidney—Temple—Temperance Lodge 73, F. & A. M., c/o C. H. Neil, plans 3 story, rein.-con. and brick. $150,000. Architect not selected.

Ind., Beech Grove — School — Catholic School having plans prepared by E. E. Dunlap & Co., archts., State Life Bldg., Indianapolis, 2 story, 65 x 100 ft., brick and stone. $150,000. P. Killian, pastor. W. Gavin, member Bd. Trustees.

Ind., Chalmers—School—J. A. Kassabaum, trustee, having plans prepared by Riedel & Zink, archts., 2 story, 75x110 ft., brick and stone. $150,000.

Ind., Evansville — Church — St. Johns Church, 3rd and Ingle Sts., having plans prepared by Fowler & Cappelle, archts., Amer. Trust Bldg., 2 story, 55 x 150 ft., brick and stone, 3rd and Ingle Sts. $150,000. W. N. Dressel, pastor.

Ind., Evansville — Church — St. Johns Church having plans prepared by J. T. Comes, archt., Renshaw Bldg., Pittsburgh, Pa., 2 story, 60x100 ft., brick and stone. $150,000.

Ind., Ft. Wayne—Office—E. H. Seelberg, 21 White Apartments, having plans, prepared by A. M. Strauss, archt., 706 Shoaff St., 2 story, 40x70 ft., brick, East Berry St. $150,000.

Ind., Frankfort—High School—Bd. Educ. having plans prepared by R. F. Daggett, archt., 960 Lemke Annex, Indianapolis, 2 story, 100 x 160 ft., rein.-con. and brick. $150,000.

Ind., Indianapolis — Apartment—H. C. Baker, 607 East 32nd St., having plans prepared by Myers & Coffin, archts., 412 Traction Trust Bldg., 2 story, 40 x 73 ft., brick, 3311 College Ave. $150,000.

Buildings (Continued)

Ind., Indianapolis — Apartment—H. N. Maloney Apartment Co., c/o E. I. Smith of E. W. Chaille Co., 921 Hume-Mansur Bldg., having plans prepared brick and limestone, 34th and Meridian Sts. $350,000. Private plans.

Ind., Indianapolis—Church—First United Brethren Church, W. R. Mommer, chn. building com., c/o Delco Light Products Co., 60 West New York St., having revised plans prepared by Rubush & Hunter, archts., 428 Amer. Central Life Bldg., 2 story, 80 x 110 ft., brick and stone, Walnut and Park Sts. $150,000.

Ind., Indianapolis—Office—H. H. Woodsmall, Fidelity Trust Bldg., plans 4 story, rein-con., brick and steel, North and Delaware Sts. $20,000. Architect not selected.

Ind., Indianapolis—School—St. Joan of Arc Church, 42nd and Ruckle Sts., having plans prepared by D. A. Bohlen & Co., archts., Majestic Bldg., 2 story, 85 x 110 ft., brick, 42nd St. $150,000. J. Chartrand, Bishop.

Ind., Indianapolis — Temple — Irvington Lodge No. 666, F. and A. M., c/o J. Fitzgerald, chn. building com., 204 Hume-Mansur Bldg., having plans prepared by C. E. Bacon, archt., 605 Odd Fellows Bldg., 3 story, 100 x 100 ft., brick and terra cotta, East Washington St. $150,000.

Ind., Knightville—School—O. Boyd, trustee, having revised plans prepared by Johnson, Miller & Miller, archts., 30 North 5th St., Terre Haute, 2 story, 80 x 140 ft., brick. $150,000.

Ind., Layafette—Union—Purdue University, Student Union, having plans prepared by Pond & Pond, archts., 64 Van Buren St., Chicago, 2 story, brick, stone and steel. $1,000,000.

Ind., Loree—School—B. F. Jenkins, trustee, having plans prepared by E. E. Dunlap & Co., archts., Harrison Bldg., Kokomo, 2 story, 95 x 125 ft., brick. $150,000.

Ind., Marion—Lodge—Marion Lodge of Eagles, plans 3 story, brick. $150,000. Architect not selected.

Ind., New Albany—Apartment—A. Moosmiller, archt., 9th and Market Sts., will prepare plans for brick apartment house. $150,000. Owners name withheld.

Ind., Newcastle—School—Bd. Educ. having plans prepared by H. Folz, archt., Lemcke Annex, Indianapolis, 2 story, 95x125 ft., brick. $200,000.

Ind., Poneto—School—O. F. Tate, trustee, plans 2 story, 80 x 110 ft. brick. $150,000. E. I. Brown, Studebaker Bldg., South Bend, archt.

Ind., Shelbyville—School—Bd. Educ. having plans prepared by J. E. Koph & Woolling, archts., 403 K. of P. Bldg., Indianapolis, 2 story, 87x110 ft., brick. $150,000.

Ind., South Bend—Bank—Union Trust Co., 204 South Michigan Ave., having revised plans prepared by Austin & Shambleau, archts., 111 North Lafayette St., 12 story, 60x125 ft., brick, granite and steel addition. $800,000.

Ind., South Bend — Church — Sunnyside Presbyterian Congregation having plans prepared by Austin & Shambleau, archts., 731 J. M. S. Bldg., 2 story, 65x90 ft., brick and stone. $150,000.

Ind., Terra Haute—Church—First Church of Christ Scientist having plans prepared by Johnson, Miller & Miller, archts., 30 North 5th St., 2 story, 90x110 ft., brick and stone. $150,000.

Mich., Ann Arbor—Gymnasium—Michigan Athletic Assn. having tentative plans prepared for 160 x 300 ft. rein.-con., brick and steel, Ferry Field. $250,000. Architect not selected.

Mich., Detroit—Bank—Detroit Branch of Federal Reserve Bank of Chicago, West Congress St., Detroit, plans 4 or 6 story, with foundation for additional stories, 100 x 160 ft. rein.-con., brick, steel and stone, caisson foundation, Fort and Shelby Sts. $750,000. Architect not selected.

Ill., Aurora — Apartment — M. E. Wolf, 275 Lake St., having plans prepared by W. Scott Armstrong, archt., 127 North Dearborn St., Chicago, 3 story, 100x200 ft., brick, steel, rein.-con. and stone, Lake St. $300,000.

Ill., Benton—Court House—Franklin Co., election in April to vote on $200,000 bonds, for court house.

RESERVOIR—CLEVELAND, OHIO

Contract No. 2

Bids were received Nov 4 by Dept. of Pub. Utilities, Div. Water, for constructing Baldwin Reservoir, from (A) Stange & Walsh Constr. Co., St. Clair Bldg.; (B) Thompson-Starrett Co., Perry-Payne Bldg.; (C) Hunkin-Conkey Constr. Co., 601 Century Bldg.; (D) Mellon-Stuart Co., 2112 Oliver Bldg., Pittsburgh, $2,029,501; (E) Central Dredging Co., 600 Bangor Bldg., $2,109,051; (F) Bates & Rogers Constr. Co., B. of L. E. Bldg., $2,309,224. The unit bids of the lowest 3 bidders were as follows:

	A	B	C
57,000 cu.yd. excavation	$2.00	$2.03	$2.50
16,500 cu.yd. concrete—wall foundations	13.00	10.70	10.52
29,500 cu.yd. concrete—walls, pilasters, conduit	13.00	11.68	11.90
7,500 cu.yd. concrete—sub-floors and foundations for columns	13.00	9.70	11.76
2,200 cu.yd. concrete-pipe covers, sumps and foundations for overflows	13.00	11.10	11.61
16,000 cu.yd. concrete—groined and barrel arches	13.00	19.10	19.00
4,800 cu.yd. concrete—flumes, stiffening walls and overflows	13.00	22.30	20.25
13,500 cu.yd. concrete—floors	13.00	12.18	12.08
8,500 cu.yd. concrete—columns	13.00	15.45	16.92
5,600 cu.yd. concrete—valve house	13.00	12.21	12.46
2 30-in. cast iron manhole frames and covers	70.00	188.00	97.73
2 43-in. cast iron pressure manhole frames and covers	125.00	142.00	131.11
59 24-in. cast iron ventilating manhole frames and covers	20.00	26.00	24.80
4 36-in. cast iron ventilating manhole frames and covers	40.00	57.00	41.88
2 48-in. cast iron ventilating manhole frames and covers	65.00	95.00	61.45
120,000 cu.yd. fill, embankment and subgrading	.40	.85	.85
16,000 cu.yd. puddle	2.00	2.52	2.57
78,000 sq.yd. top soil and seeding	.10	.19	.30
1,200 cu.yd. broken stone fill	3.00	4.73	4.05
3,500,900 lb. reinforcing steel	.03	.031	.0294
7,000 lb. structural steel	.10	.14	.137
820 tons cast iron—standard lengths, be l and spigot pipe	7.00	63.40	65.93
120 tons cast iron—standard fittings, bell and spigot pipe	150.00	116.50	148.12
80 tons cast iron—special fittings, bell and spigot pipe	165.00	126.00	154.08
5 tons cast iron—standard short length flanged and bell, and flanged and spigot pipe	165.00	135.00	134.43
5 tons cast iron—standard fittings flanged pipe	225.00	158.00	218.29
60 tons cast iron—special fittings, flanged pipe	140.00	110.30	121.07
240 tons cast iron—plain pipe, no bell, spigot or flange	70.00	66.50	69.14
5 tons cast iron—miscellaneous and special castings	135.00	147.00	147.24
5 60-in. valves	2,500.00	2,410.00	2,509.04
7 48-in. valves	1,500.00	1,410.00	1,442.04
2 36-in. valves	900.00	985.00	968.54
2 30-in. valves	675.00	740.00	748.47
2 12-in. valves	90.00	77.00	76.27
7 6-in. valves	30.00	31.00	26.15
26,000 lin.ft. tile drain	.10	.19	.32
450 lin.ft. vitrified pipe drain	6.00	5.57	3.74
6,500 lb. hand railing	.30	.18	.20
13,500 lb. copper expansion joints	.30	.41	.45
2 5x7-ft. sluice gates	1,200.00	2,425.00	1,290.00
Brass pipes, valves, etc., for float tube connection (lump sum)	200.00	235.00	106.57
Stop plank and weirs (lump sum)	1,000.00	1,775.00	1,660.00
Number of calendar months to complete work	14	14	18
Extended totals	$1,824,125	$1,933,248	$1,994,833

Ill., Carbondale—High School—Bd. Educ., c/o J. W. Mitchell, secy., having plans prepared by R. Z. Gill, archt., Murphysboro, 2 story, brick, stone and rein.-con. $160,000.

Ill., Chicago—Office and Sales—Davidson & Weiss, archts., 53 West Jackson Blvd., soon receives bids 10 story, rein.-con., brick and steel, Michigan Ave. and 13th St., for E. C. Ruttenberg, 6 North Franklin St. $450,000.

Ill., Chicago—Store and Hotel—Loewenberg & Loewenberg, archts., 111 West Monroe St., soon receive bids 4 story, 141 x 187 ft., rein.-con., brick, steel and terra cotta, Howard St. and Bosworth Ave., for L. J. Rubin & Co., 214 South Market St. $350,000.

Ill., Evanston—Hotel and Store—W. C. Jones, archt., 19 South La Salle St., Chicago, preparing preliminary plans 7 story, rein.-con., brick and steel, here. $1,500,000. Owners name withheld.

Ill., Joliet — Apartment-Hotel — B. J. Bruns, archt., 1548 Belmont Ave., Chicago, takes bids about Jan. 15, 9 story, rein.-con., brick and steel. $500,000. Owners name withheld.

Ill., Martinsville—School—Bd. Educ. having plans prepared by Johnson, Miller & Miller, archts., 30 North 5th St., Terre Haute, Ind., 2 story, 80 x 125 ft., brick, steel and rein.-con. $150,000.

Ill., Melvin—Bd. Educ. having plans prepared by A. L. Pillsbury, archt., 710 Peoples Bank Bldg., Bloomington, 2 story, steel, rein.-con., brick and stone. $165,000. W. J. McKenna, clk.

Ill., Moline—Club—Country Club Com., c/o R. E. Stalz, chn., 2356 6th St., East Moline, plans 2 story, brick, rein.-con. and stone. $175,000. Architect not selected.

Ill., Monmouth—Stadium and Gymnasium—Monmouth College, 833 East Bway., having plans prepared, brick, steel, rein.-con. and stone stadium and gymnasium. $150,000. T. H. McMichael, pres. Architect's name withheld.

Ill., Rock Island — High School — Bd. Educ. having plans prepared by Cervin & Horn, archts., 311 Safety Bldg., 2 story, brick, stone and steel. $200,000. Noted Dec. 1.

Ill., White Hall—High School—Bd. Educ., c/o H. W. Shirley, secy., having plans prepared by A. L. Pillsbury, archt., Peoples Bank Bldg., Bloomington, 2 story, brick, rein.-con., and stone, $150,000.

Wis., Beloit—Theatre—Beloit Amusement Co., c/o E. S. Hall, secy. of State, Madison, soon takes bids, 1 and 2 story, 93 x 130 ft., brick, plain foundation, here. $200,000.

Wis., Fond du Lac—Hospital—St. Agnes Hospital, c/o F. S. Wiley, 100 East Division St., plans 4 story, 200 x 250 ft., rein.-con., brick and steel, plain foundation. $500,000. Architect not selected.

Wis., Oconomowoc—High School—School Bd. having plans prepared by Parkinson & Dockendorff, archts., Linker Bldg., La Crosse, 2 story, 68 x 148 ft., brick and concrete, plain foundation. $135,000 to $20,000. E. W. Delaney, secy.

Wis., West Bend—High School—Bd. Educ. having plans prepared by Foeller & Schoeber, archts., 123 North Washington St., Green Bay, 2 story, 50 x 200 ft. rein.-con. brick and steel, plain foundation. $250,000.

Ia., Decorah — High School — Bd. Educ. plans 2 story, rein.-con., brick, tile and stone. $150,000 bonds voted. C. F. Barfoot, clk. Engineer not announced. Noted Dec. 8.

Minn., Minneapolis—School etc.—Augsburg Seminary, c/o G. Sverdrup, pres., 8th St. and 21st Ave., S., plans brick, tile and stone, at Wood Lake, $300,000. Architect not announced.

Minn., Minneapolis—School—De La Salle Institute, c/o A. Dowling, Archbishop, 226 Summit Ave., St. Paul, plans 3 story, rein.-con., brick, tile and stone, at 17 Grove St., here, $250,000. Architect not announced.

Minn., Olivia—High School—Bd. Educ. receives bids in January, 2 story, rein.-con., brick, tile and stone, $180,000. W. L. Alban, 347 Endicott Bldg., St. Paul, archt.

Minn., Virginia—City Hall—City, c/o A. E. Bickford, clk., having plans prepared by A. W. Kerr & Co., archts., 240 La Salle Bldg., Minneapolis and Virginia, 4 story, rein.-con., brick, tile and stone. $300,000.

Kan., Salina—Temple—Masonic Temple Aid Assn. having plans prepared by T. L. Condron Co., archts., 53 West Jackson Blvd., Chicago, 6 story, 123 x 162 ft. rein.-con., brick and steel. $1,000,000.

Buildings (Continued)

Mo., Carrollton — Home — State Bd. Eleemosynary Institutions, Jefferson City, plans 3 story, rein.-con., brick and steel home here, for neglected children. $200,000. Architect not selected.

Mo., Columbia — Chemistry — University of Missouri, c/o L. Cowan, secy., having plans prepared by J. P. Jamieson, archt., Security Bldg., St. Louis, 2 story, rein-con., brick and stone. $175,000.

Mo., Columbia — Dormitory — Stephens College plans 3 story, rein.-con. and brick, on campus. $150,00. Architect not selected.

Mo., Columbia — Temple and Students Building—Oddfellows of Missouri, Columbia Branch, c/o G. Starrett, chn., Building Comn., plans 3 story, rein.-con., brick and stone. $150,000. Architect not selected.

Mo., Greenfield—Court House—Dade Co. election Jan. 31 to vote on $160,000 bonds, 2 story, brick, stone and steel. Achitect not selected.

Mo., Kansas City—Hotel—P. J. Bradshaw, archt., International Life Bldg., St. Louis, soon lets contract 15 story, 110 x 203 ft., rein.-con., brick and stone, here, for Bellerive Investment Co., c/o A. M. Cornwall, 111 North 7th St., St. Louis. $1,000,000. Noted Nov. 24.

Mo., St. Joseph—Lodge—St. Joseph Aerie 19, Fraternal Order of Eagles, 517 North 5th St., plans 3 story, rein.-con. and brick. $175,000. Architect not selected.

Mo., St. Louis—Bank—A. B. Groves, archt., Stock Exch. Bldg., soon lets contract 2 story, 94 x 112 ft., brick, stone and steel, Jefferson and Franklin Sts., for Jefferson Bank, c/o V. T. Moberly, pres. $150,000.

Mo., St. Louis—Sales—Thirty-Sixth St. Realty Co., 111 North 7th St., having plans prepared by P. J. Bradshaw, archt., International Life Bldg., 96x144 ft., rein.-con., brick and stone, 3510 Lindell Blvd. $150,000.

Cal., Fresno—Hotel and Store—F. Dodd and F. W. Williams, having preliminary plans prepared by B. G. McDougall, archt., 381 Bush St., San Francisco, 10 story, rein.-con., Tulare St. and Bway. $500,000.

Cal., Los Angeles — Jail—Bd. Supervs. Los Angeles Co. having plans prepared by Allied Architects Assn., 1128 Citizens Bank Bldg., 11 story, 195 x 226 ft., Temple, Buena Vista and New High Sts. $2,500,000. Noted April 21.

Cal., San Luis Obispo—Hotel—Carpenter Hotel Co., having preliminary plans prepared by G. Rushforth, archt., 354 Pine St., San Francisco, 5 story, rein.-con. and brick. $250,000.

BIDS DESIRED

Conn., Greenwich—Apartment—F. G. C. Smith, archt., Smith Bldg. receiving bids 5 story, 54x100 ft., rein.-con. and brick, plain foundation. Greenwich Ave., for F. Zittell, c/o architect. $150,000.

N. Y., New York—Apartment—E. Waters, c/o J. M. Felson, archt. and engr., 1133 Bway., 5 story, brick, steel and stone, plain foundation, Grand Ave. and 190th St. $150,000. Work will be done by separate contracts.

N. Y., New York — Apartment—M. J. Kramer, c/o G. F. Pelham, archt. and engr., 200 West 72nd St., 7 story, brick, steel and stone, plain foundation, Hamilton Pl. $750,000. Work will be done by separate contracts.

N. Y., New York—Bank and Office—Jan. 5, by Trowbridge & Livingston, archts. and engrs., 512 5th Ave., 23 story, brick, steel and stone, plain foundation, Wall, William and Pine Sts., for Bank of America, 44 Wall St. $2,500,000. Noted Nov. 10.

N. Y., New York—Theatre—Jan. 5, by Reilly & Hall, archts. and engrs., 405 Lexington Ave., 3 story, 100 x 120 ft., brick, steel and stone, plain foundation, MacDougal and West Houston Sts., for Fagazy & Rosetti, c/o architects. $150,000. Noted Nov. 3.

N. J., Secaucus (Weehawken P. O.)—Insane Asylum—Jan. 12 (change of date) by Bd. Freeholders Hudson Co. (Jersey City) five 2 story, brick and steel buildings, here. Cost between $750,000 and $1,000,000. J. T. Rowland, Jr., 100 Sip Ave., Jersey City, archt. Noted Dec. 15.

Pa., Gettysburg—Hotel—Jan. 5, E. B. Medoff, archt., Lincoln Bldg., Philadelphia. 4 story, 100 x 175 ft. brick and steel, plain foundation, for Lynch Bros., Eagle Hotel. $150,000. Noted Nov. 24.

Pa., Philadelphia—Theatre and Office—T. W. Lamb, archt., 644 8th Ave., New York, receiving bids 16 story, 129 x 129 ft., rein.-con., brick and steel, caisson foundation, 16th and Market Sts., here, for Fox Film Corp., 126 West 46th St., New York. $1,000,000.

N. C., Fayetteville—School—Jan. 10 by building com., State Colored Normal School, for several buildings. Bids are asked on individual units and also in blanket form. $185,000. H. L. Cook, chn. S. S. Dixson, Fayetteville, archt.

La., New Orleans—Community House—Jan. 2, by Daugherty & Gardner, archts., Stahlman Bldg., Nashville, Tenn., 3 story, rein.-con., brick and steel, Rampart and Governor Sts., for Methodist Episcopal Bd. of Missions. $165,000.

Tenn., Murfreesboro—Dormitory—Jan. 5 by J. B. Brown, supt. instruction, State Bd. Educ., State Capitol, Nashville, 2 story, 40 x 160 ft., brick, here. H. C. Hibbs, Natl. Bank Bldg., Nashville, archt.

Tenn., Nashville—School—Jan. 5, by L. Pope, dir. of administration, 3 story, brick school for feeble minded. $250,000. Marr & Holman, 701 Stahlman Bldg., archts. Noted Aug. 25.

Ky., Frankfort—Hotel—Jan. 4, by New Capitol Hotel Co., 4 story, 100 x 150 ft., brick and concrete. $250,000. F. L. Packard, New Hayden Bldg., Columbus, O., archt. Noted Oct. 13.

O., Cleveland—Apartment—Jan. 4, by S. H. White, archt., Schofield Bldg., 9 story, 80 x 350 ft., brick, steel and concrete, plain foundation, East 116th St. and Shaker Blvd., for Chester Gardens Co., c/o architect. $2,500,000. Former bids rejected. Noted Nov. 3.

O., Cleveland—Commercial—C. Krause, 2042 East 4th St., taking bids 3 story, 90x120 ft., brick, steel and concrete, plain foundation, Chester Ave. West of East 11th St. $150,000. G. G. Bohm, Williamson Bldg., archt. Noted Nov. 3.

O., Cleveland—Commercial and Apartment—F. Dolinsky, 10514 Pasedena Ave., taking bids 3 story, 57 x 83 ft., brick and steel, plain foundation, 11121 Detroit Ave. $150,000. A. F. Janowitz, Permanent Bldg., archt.

O., Cleveland—Store and Apartment—B. Koslen, 2201 East 70th St., taking bids 3 story, 91x100 ft., brick, steel and concrete, plain foundation, East 123rd St. near Durant Ave. $150,000. M. Altschuld, 5116 Woodland Ave., archt.

O., Columbus—Divinity Hall—Jan. 6, by O. Meese, pres. Capitol University, East Main St., 2 story, 210 x 300 ft., brick and concrete. $176,000. Perkins, Fellows & Hamilton, 814 Tower Court, Chicago, archts.

Ind., Battle Ground—School—Feb. 2, by C. Walters, trustee, 1 story, 133 x 169 ft., brick. $150,000. Nicol, Scholer & Hoffman, Ross Bldg., Lafayette, archts.

Ind., Indianapolis—Apartment—Jan. 8, by Pennsylvania Apartment Hotel Corp., 914 Hume-Mansur Bldg., 6 story, 52 x 178 ft., brick and concrete, North Pennsylvania St. $300,000. W. K. Eldridge, 914 Hume-Mansur Bldg., archt.

Ind., Indianapolis—Church—Columbia Pl., Christian Church receiving bids 2 story, 125 x 135 ft., brick and stone, 40th St. and Capitol Ave. $150,000. C. O. Morris, 938 West 32nd St., archt.

Ill., Chicago—Apartment—Johnston Bros., 109 North Dearborn St., receiving bids 3 story, 110 x 125 ft., rein.-con., brick and steel, 72nd and Jefferson Sts. $150,000. Owner will do carpentry work. T. M. Mitchell, 138 North La Salle St., archt.

Ill., Chicago—Apartment—J. A. Nyden, archt., 190 North State St., receiving bids 3 story, 120 x 150 ft., rein.-con., brick, steel and stone, Brompton and Pine Grove Aves., for C. R. Gleason, 111 West Washington St., $250,000.

Ill., Chicago—Apartment—J. A. Nyden, archt., 190 North State St., receiving bids 3 story, 107 x 150 ft., rein.-con., brick, steel and stone, Winthrop and Greenlake Aves., for C. R. Gleason, 111 West Washington St. $200,000.

Ill., Chicago—Apartment—Whitney & Williams, archts., 122 South Michigan Ave., receiving bids 3 story, 80 x 153 ft., rein.-con., brick, steel and stone, on Northwest Side, for R. Levine, 133 West Washington St., $150,000. Noted Dec. 15.

Ill., Chicago—Restaurant—R. G. Schmidt & Co., archts., 154 West Randolph St., receiving bids 2 story, 100 x 100 ft., rein.-con., brick and steel, Sheridan Rd. and Wilson Ave., for Garibaldi & Cuneo, 1 West South Water St. $150,000. Noted Oct. 20.

Ill., Oak Park—Apartment—Minchin & Spitz, archts., 19 West Jackson Blvd., Chicago, receiving bids, 3 story, brick and stone, 242 Maple Ave., for O. Prohaska, c/o architects. $175,000. Noted Dec. 1.

Kan., Independence — High School— [illegible] 10 by N. S. Spencer & Sons, archts., 37 [illegible] VanBuren St., Chicago, 3 story, 180x23[illegible] rein.-con., brick and steel, here, for [illegible] Educ. C. S. Risdon, supt. $400,000. N[illegible] Dec. 1.

Ariz., Phoenix—Depot—Santa Fe [illegible] and Arizona Eastern R.R., P. E. Bldg., [illegible] Angeles, receiving bids 2 story, 122 x [illegible] ft., steel, tile and concrete, here, $300,000. W. H. Mohr, c/o owner, archt.

Cal., Los Angeles—High School—Jan. 4, by Bd. Educ., Security Bldg., 2 story, 132 x 350 ft., rein.-con., brick and tile, Bronson Ave. near Fountain Ave. $280,000. E. H. Cline, c/o Bd. Educ., archt.

Ont., Ottawa—Collegiate—Jan. 4, by C. Bethune, secy. Ottawa Collegiate Bd., 18 Elgin St., structural steel work for institute, Carling Ave. $200,000. J. A. Ewart, Jackson Bldg., Bank St., archt.

BIDS RECEIVED

Mass., Boston—Hospital—City Hospital Dept., Harrison Ave, 2 story, 43 x 150 ft. and 43 x 107 ft. top addition, two 6 story, 28 x 43 ft. and 40 x 43 ft. annexes, rein.-con., brick and steel, plain foundations, Harrison Ave., from J. Bowen Co., 184 Dudley St., Boston, $493,000; J. Slotnik Co., 448 Bway., Chelsea, $514,780; Evatt Constr. Co., 161 Devonshire St., Boston, $515,000. Noted Dec. 15.

Mass., Brookline — High School—School Bd., 3 story, 61 x 153 ft., 85 x 89 ft. and 40 x 124 ft., brick, Tappan Ave., from J. P. Keating, Westboro, $374,000; D. G. McDonald, 164 Dudley St., Boston, $377,630; Coblo & Griffin, 46 Cornhill, Boston, $379,729. Noted Dec. 15.

Wis., Superior — Auditorium — City, 2 story, 75 x 140 ft. brick, plain foundation, 14th St. and Ogden Ave., from L. A. Hoffman, 1309 John St., $141,000; A. Wilcott & Sons, Superior, $144,600; A. Dauplaise, 5512 Baxter St., $145,072. Noted Dec. 8.

Minn., Minneapolis—Junior High School—Bd. Educ., 3 story, 218x230 ft., rein.-con., brick, tile and stone, Clinton Ave. and 38th St., from Madsen & Peterson, 646 Builders Exch. Bldg., $309,658 plus $9,020 for remodeling old building; Bracker Constr. Co., 638 Builders Exch. Bldg., $312,990 plus $6,030; Kvitrud Constr. Co., 646 Builders Exch. Bldg., $314,400. Noted Nov. 24.

Kan., Independence—High School—Bd. Educ., 3 story, brick, plain foundation, (general contract), from P. J. Morley, 1701 Main St., Kansas City, Mo., $284,340; A. S. Hecker Co., 815 Reserve Bank Bldg., Kansas City, Mo., $367,000; Murch Bros., R-W Exch. Bldg., Kansas City, Mo., $380,000. Noted Nov. 24.

CONTRACTS AWARDED

Mass., Boston — Hospital — Forest Hills Hospital, 29 Morton St., 3 story, 52 x 150 ft., brick, Morton St., to Coblo & Griffin, 46 Cornhill St., $150,000.

Mass., Lawrence — High School — Bd. Educ., 4 story, 115 x 317 ft. and 92 x 147 ft., brick and stone, to G. Dose Eng. Co., 43 West 27th St., New York, $758,700. Noted Nov. 17.

Mass., Wakefield — Library — Town, 1 story, 64 x 98 ft., brick, Main St., to J. E. Nelson Co., 7 Water St., Boston, $150,000. Noted Nov. 3.

N. Y., Brooklyn—Apartment—King-Carroll Bldg. Corp., c/o M. A. Cantor, archt. and engr., 371 Fulton St., 4 story, 100 x 100 ft., brick, steel and stone, plain foundation, Crown St. and Kingston Ave., by day labor. $150,000.

N. Y., New York—Apartment—Arrowhead Holding Co., 41 Convent Ave., 5 story, 90 x 125 ft., brick, steel and stone, plain foundation, Haven Ave., by day labor. $500,000. G. F. Pelham, 200 West 72nd St., archt. and engr.

N. Y., New York—Apartment—F. M. and S. Corp., c/o G. F. Pelham, archt. and engr., 200 West 72nd St., 5 story, brick, steel and stone, plain foundation, 212th St., by day labor. $200,000.

Pa., McKeesport—Y. M. C. A., 2 West 45th St., New York, 4 story, 115 x 170 ft. brick, steel and stone, plain foundation, to Schutz, Schreiner & Clyde Co., May Bldg., Pittsburgh, $535,000.

Pa., Philadelphia — Theatre — Willard Theatre Co., c/o C. E. Oelschlager, archt., 1615 Walnut St., 1 story, 65 x 125 ft. brick and steel, plain foundation, 40th and Market Sts., to W. S. Gore, 6 North 41st St., $150,000. Noted Dec. 22.

D. C., Wash.—Bank and Office—C. Tompkins, 1612 Park Rd., will build concrete bank and office building, 14th St. and

Buildings (Continued)

Park Rd., N.W., by day labor. $400,000. G. W. Ray, 1147 Conn. Ave., N.W., archt.

Va., Richmond—High School—Bd. Educ., 4 story concrete and brick, Marshall St. between 8th and 9th to A. M. Walkup & Co., 746 North 17th St. $341,000.

W. Va., Logan—Hospital—H. D. Hatfield, R. & P. Bldg., and others, 5 story, 40 x 110 ft., brick and stone, to V. E. Taylor, 547 Adams Ave., Hungtington, $150,000.

N. C., Winston-Salem—High School—Bd. Trustees constructing Richard J. Reynolds Memorial High School and power house in connection with same, to Dupont Eng. Co., Dupont Bldg., Wilmington, Del., $388,700 and $28,250 respectively; heating of school to Grinnell Co., Charlotte, $73,790.

Fla., Tallahassee—Capitol—Bd. State Institutions two 3 story wings, rein.-con., brick, marble and steel. to Parker & Yeager, Tallahassee, $153,000. Noted Nov. 17.

O., Castalia—School—Bd. Educ. 2 story, 103 x 106 ft., brick, steel and concrete, plain foundation, to Hossler Bros., Tiffin, $150,000.

O., Cleveland—Apartment Hotel—L. W. Kelly, Hippodrome Bldg., 12 story, 94x190 ft., brick, steel and concrete, plain foundation, Euclid Ave. and East 107th St., to J. Gill & Sons, Citizens Bldg., $1,500,000. Noted Oct. 27.

O., Delaware—Dormitories—Bd. Trustees Ohio Wesleyan University, building Austin Hall, brick and stone, on site of Monett Annex, also Watson Memorial, Central Ave. and Elizabeth St., to H. K. Ferguson Co., 6523 Euclid Ave., Cleveland. $200,000 and $300,000 respectively. Noted Dec. 22.

O., North Robinson—High and Grade School—Bd. Educ., 2 story, 100 x 124 ft., brick, steel and concrete, plain foundation, to Miller Bros., Bucyrus, $200,000.

Ind., Indianapolis — Church — Tabernacle Presbyterian Church, 2 story, 189 x 305 ft., concrete, stone and steel, 34th St. and Central Ave. to E. Wehr Constr. Co., East Liberty Sta., Pittsburgh, Pa., $300,000.

Ind., Indianapolis — Theatre—Stegemeier Bros., Occidental Bldg., 2 story, 44 x 120 ft., concrete, brick and terra cotta, 17 North Illinois St., to Bedford Stone & Constr. Co., Fletcher Trust Bldg., $175,000. Noted, Dec. 8.

Ind., Terre Haute—School—Bd. Educ. 2 story, 65 x 88 ft. brick and stone, to W. Caton, 900 South 6th St., $150,000. Noted May 12.

Ill., Chicago—Office, etc.—J. H. Taylor & Co., 101 4th Ave., New York, 10 story, 100 x 110 ft., rein.-con., brick and steel office and factory, to G. Thompson & Son, 30 North LaSalle St., $550,000. Noted Nov. 10.

Wis., Genoa Junction—Lodge—E. G. Shinner, c/o C. B. Falkner, archt., 140 South Dearborn St., Chicago, having plans prepared 1 and 2 story, 100 x 100 ft. lodge building, 1 story, 85 x 85 ft. dining hall, 1 story, 100 x 100 ft. garage, 50 x 50 ft. power house, boat house, polo grounds, golf course, etc., on Tombeau Lake near Lake Benedict and Lake Powers, for Nippersink Lodge. $250,000. Work will be done by day labor.

Minn., Minneapolis — Apartments — Fleisher Constr. Co., 608 Builders Exch., fifteen 3 story, 40x110 ft., brick, tile and stone, $50,000 to $60,000 each. Owner builds by day labor. A. Rose, 500 Builders Exch. Bldg., archt.

Tex., Dallas—Office—Cary-Schneider Investment Co., Gt. Sou. Life Bldg., 18 story, 112 x 112 ft., rein.-con. and brick, Masten and Pacific Sts., to G. W. Hewitt, Slaughter Bldg., $1,000,000. Noted Dec. 8.

Tex., Dallas—Y. W. C. A., 4 story, 90 x 115 ft., rein.-con., administration building, Jackson and Prather Sts., to Watson Co., 1927 South Akard St., $375,000. Noted June 16.

Okla., Duncan—Hotel—Modern Hotel Co., c/o W. C. MacCready, pres. Ballinger Bldg., St. Joseph, Mo., 6 story, 140 x 140 ft., concrete, brick and steel, here, to E. H. Lawhon, 905 Edmond St., St. Joseph, Mo., $500,000.

Cal., Los Angeles — Office — Automobile Club of Southern California, c/o Hunt & Burns, archts., 701 Laughlin Bldg., 3 story, 207 x 267 ft., rein.-con. and stone, 26th and Figueroa Sts., to C. J. Rubach Co., Merchants Natl. Bank Bldg., $500,000.

Cal., Santa Barbara — Hospital — St. Francis Hospital, 3 story, 40 x 190 ft., and 4 story, 40 x 90 ft., rein.-con., to J. Y. Parker, 610 Live Oak, $215,000. Noted Mar. 17.

Federal Government Work

PROPOSED WORK

D. C., Wash.—School—War Dept., c/o Quartermaster, Constr. Div., plans 3 story, rein.-con. and brick, army medical school, at Walter Reed Hospital.

BIDS DESIRED

D. C., Bellevue—Power Plant equipment and Installation—Spec. 4497—Bureau Yards & Docks, Navy Dept., Wash., receiving bids four 150 hp. return tubular boilers and mechanical stokers, boiler and fire pumps, motor driven air compressor or brick setting and superheaters for 4 boilers, crane, 2 turbine driven forced draft fans, steel smoke flue, feed water heater, heating system return tank, condenser equipment, air condenser and circulating pumps, service water heater traveling screen, structural supports, concrete foundations and pipes, valves and fittings. Noted Dec. 1.

S. C., Charleston—Foam Fire Protection System—Spec. 4558—Jan. 4, (change of date) by Bureau Yards & Docks, Navy Dept., Wash., D. C., foam fire protection system, at Navy Yard, here. Noted Dec. 8.

Ga., Augusta—Hospital—Jan. 18, Treas. Dept., Wash., D. C., construction, incl. mechanical equipment of U. S. Pub. Health Serv. Hospital, here; adv. this issue. Noted Dec. 15.

La., New Orleans—Ice Making and Refrigerating Plant—Jan. 16, Treas. Dept., Wash., D. C., ice making and refrigerating plant, at U. S. Quarantine Station, here. J. A. Wetmore, acting supervy. archt.

Mo., Kansas City—Pumping Plant, etc.—Jan. 12, Treas. Dept., Wash., D. C., pumping plant, hydraulic freight elevator, etc., in U. S. Post Office and Court House, here. J. A. Wetmore, acting supervy. archt.

Cal., San Diego—Post Exchange and Dispensary—Spec. 4527—Jan. 18, Bureau Yards & Docks, Navy Dept., Wash., D. C., for post exchange and dispensary buildings, at Naval Base, here; adv. this issue. Noted Oct. 6.

CONTRACTS AWARDED

Va., Yorktown—Water Supply System—Spec. 4514—Bureau Yards & Docks, Navy Dept., Wash., D. C., water supply system at Naval Fuel Depot, here, to Newport Contg. and Eng Co., Law Bldg., Newport News, $18,623 (240 days). Noted Dec. 22.

N. C., Oteen—Changes to Services—Treas. Dept., Wash., D. C., changes to services, etc., in U. S. Pub. Health Serv. Hospital, here, to Ransom & Anderson Co., Inc., 136 Liberty St., New York, $19,890 (90 days). Noted Dec. 15.

Ga., Savannah — Quarters—Spec. 4517—Bureau Yards & Docks, Navy Dept., Wash., D. C., quarters at radio station, here, to Universal Constr. Co., 316 West Dewald St., Fort Wayne, Ind., $2,845 (120 days). Noted Dec. 22.

Wis., Milwaukee — Hospital—Bd. Mgrs. Natl. Home for Disabled Volunteer Soldiers, Dayton, O., 2 story, rein.-con. and brick, at Soldiers Home, here, to H. Schmitt & Son, 430 Farwell Ave., 1,094,000. Noted Dec. 1.

H. T., Pearl Harbor—Storehouse—Spec. 4504—Bureau Yards & Docks, Navy Dept., Wash., D. C., 1 story storehouse, at Naval Operating Base, here, to W. F. Martens, 53 Franklin St., Rochester, N. Y., $196,775 (263 days). Noted Dec. 15.

Miscellaneous

PROPOSED WORK

Stone Crusher — Medford, Wis. — Soon takes bids stone crusher. H. Mauer, clk.

Stadium — Northfield, Minn. — Carleton College plans concrete stadium, 25,000 seating capacity, and improvements to athletic field. 150,000. F. J. Fairbank, treas.

Electric Lighting and Power System—Cayuga, Ont.—Plans electric lighting and power distribution system. R. S. Colter, member of Council.

Electric Lighting and Power System—Hensall, Ont.—Usborne Twp. plans electric lighting and power distribution system. $30,000. Address H. Strang, member of Council.

Electrification of Railway—North Bay, Ont—Temiskaming & Northern Ontario Ry., plans to investigate complete electrification of railway, incl. new line from Cochrane to New Post. About 500,000 electrical hp. can be developed on Abitibi River, as well as several waterfalls on Ottawa, Montreal and Sturgeon water sheds. S. B. Clement, North Bay, ch. engr.

Asphalt Plant and Street Flusher—Windsor, Ont.—Election Jan. 2, to vote on $25,000 bonds for asphalt plant and $10,000 for street flusher. A. Brian, city engr.

BIDS DESIRED

Station Finish—New York, N. Y.—Jan. 18, by Transit Comn., 49 Lafayette St., for completion of construction and station finish for 2 stations on Bway.-4th Ave. Rapid Transit R.R. G. McAneny, chn.

Shafts and Tunnel—Jersey City, N. J.—Feb. 7, by New York State Bridge & Tunnel Comn., and New Jersey Interstate Bridge & Tunnel Comn., Room 617, Hall of Records, New York, land shafts and vehicular tunnel under Hudson River, here. Noted Nov. 24.

Jaw Crushers, Conveyors, etc.—Florence, Ala.—Muscle Shoals, Rock Asphalt Co., 103 Court St., is in the market for 4 jaw crushers, 400 ton daily capacity, 4 conveyors, 4 steel rollers, 48 in. diameter about 30 in. long for pulverizing asphalt, air compressors, jack hammer drills, and ½ ton revolving shovel dipper, caterpillar preferred. A. J. Bright, Nashville, Tenn., ch. engr.

Jaw Crusher—Blanchester, O. — C. A. Magee in market for one 9 x 16 in. jaw crusher with elevator and screen.

Road Machinery—Lancaster, Wis.—Jan. 3, by H. Mink, comr. Grant Co., 12 patrol graders, 1 scarifier, 12 road drags, 4 slip scrapers, 4 plows and one hundred 6 ft. grader blades.

Street Signs—Minneapolis, Minn.—Jan. 3, by K. E. Alexander, city purch. agt., 1,000 metal street signs.

Terminal Substructure — San Francisco, Cal.—Jan. 12, by State Bd. Harbor Comrs., Ferry Bldg., sub-structure for China Basin Terminal, incl. 1,000-ft. seawall, foundations and ground floor of building, 122 x 812 ft., filling and 6,000 green piles. $800,000. F. G. White, ch. engr.

Asphalt Heating Plant—Santa Rosa, Cal.—Jan. 11, by Bd. Supervs. Sonoma Co. asphalt heating plant. $4,000. R. P. Smith, co. engr.

BIDS RECEIVED

Cranes — Stapleton, S. I., N. Y.—Dept. Docks, Pier "A" foot of Battery Pl., New York, opened bids Dec. 21, installing and putting into successful operation cranes on Piers 12 and 13, here. Contr. 1686, from Wellman-Seaver-Morgan Corp., Real Estate Trust Bldg., Cleveland, O., proposal (a) $324,500, (b) $314,450, (c) $304,400, (d) $294,350, (e) $276,268; Heyl & Patterson, Inc., 90 West St., New York, (a) $344,921, (b) $331,198, (c) $317,234, (d) $302,540, (e) $280,228; McMyler Interstate Co, 50 Church St., New York, (a) $375,774, (b) $362,560, (c) $349,350, (d) $334,218, (e) $517,934; Niles Bement Pond Co., 111 Bway., New York, (e) $345,950. Noted Dec. 15.

CONTRACTS AWARDED

Steam Asphalt Roller—New York, N. Y.—H. Bruckner, pres. Bronx Boro, Municipal Bldg., furnishing and delivering one 5 ton steam asphalt roller, to Buffalo-Springfield Roller Co., Kenton and Oak Sts., Springfield, Ohio., $2,390. Noted Dec. 8.

Elimination of Grade Crossings, etc.—North Tonawanda, N. Y.—New York Central R.R., Grand Central Terminal, New York, for elimination of grade crossings, raising of track, etc., subways, bridges and viaducts, here, to Walsh Constr. Co., Syracuse Herald Bldg., Syracuse, $500,000.

Swimming Pool, etc.—Nashville, Tenn.—Cascade Corp., concrete swimming pool, bath houses, etc., to O. F. Whittle, 2015 Linden Ave., $75,000. Noted Dec. 15.

Electric Lighting and Power System—Blenheif, Ont.—Harwich Twp., electric lighting and power distribution system. $40,000. Work will be done by Hydro Power Comn. under direction of J. N. Wilson, engr., 190 University Ave., Toronto.

Electric Lighting and Power System—Charing Cross, Ont.—Raleigh Twp., electric lighting and power distribution lines to Kent Centre, Louisville and Tupperville. $60,000. Work will be done by Hydro Power Comn. under direction of E. R. Lawlor, engr., 190 University Ave., Toronto.

Electric Lighting and Power System—Ridgetown, Ont.—Howard Twp. electric lighting and power distribution system. Work will be done by Hydro Power Comn. under direction of A. Beck, 169 Albert St., London.

OFFICIAL PROPOSALS

Bids: Jan. 10.

Steel or Concrete Bridge Construction

Lake Charles, La.

Sealed proposals for constructing the Moss Bluff Highway Bridge across the Calcasieu River, near Lake Charles, Louisiana, and addressed to the Hon. W. J. Prater, President of Police Jury, Calcasieu Parish, Louisiana, will be received at the office of the Parish Clerk, Lake Charles, Louisiana, until 12 o'clock M. January 10th, 1922.

The work comprises:

The construction of a steel highway bridge across the Calcasieu River and a reinforced concrete or creosoted timber approach trestle across the adjacent marsh, together with a steel lift span with 94 ft. clear opening. The bridge will be built on either of two alternates for various combinations of the different types of construction and for each alternate the construction of the substructure a steel superstructure may be bid on separately, as distinct contracts. Contractors may bid on any or all alternate types of design or upon any combination of contracts. Both furnishing and erection of structural steel trusses and lift span are in all cases included in the same contract. Some of the river piers will be carried over sixty feet below ordinary river level. The entire structure will be about One Thousand Four Hundred Fifty (1,450) feet in length and either 18 or 20 ft. in clear width. Instructions and proposal blanks may be obtained from and detailed plans and specifications are on file with the Parish Clerk at Lake Charles, Louisiana, and at the office of The Terrell Bartlett Engineers, Calcasieu Building, San Antonio, Texas. Each proposal must be accompanied by a certified or cashiers check in the sum of not less than 5% of the amount bid.

Bidders must fulfill conditions provided in the "Instructions to Bidders."

The Parish reserves the right to reject any or all bids.

W. J. PRATER,
President Calcasieu Police Jury,
Lake Charles, Louisiana.

Bids: Jan. 31.

Filter Plant and Reservoir

Atlanta, Ga.

Sealed proposals for furnishing material and constructing a Filter Plant and a Clear Water Reservoir for the City of Atlanta, Georgia, will be received by the Purchasing Agent of the City of Atlanta at the City Hall until 2:30 P. M. on the 31st day of January, 1922.

The work will consist of a Reinforced Concrete Filter Plant, of 7 units of 3 million gallons daily, capacity each, with Laboratory attached. A 10 million gallon Reinforced Concrete, covered Reservoir, a Reinforced Concrete Wash Water Tank, together with Reinforced Concrete Conduits, cast iron pipe lines with miscellaneous structures and appurtenances and connections to the present system.

Each proposal must be accompanied by a certified check payable to the City of Atlanta, in an amount equal to 5% of the bid, as a guarantee that the contract will be entered into if awarded. A Bond of One Hundred (100%) per cent of the contract price will be required. Payments will be made in cash on monthly estimates.

Plans and specifications are on file at the office of the General Manager of the Atlanta Water Works, City Hall, Atlanta. P. H. Norcross, Consulting Engineer, 1405 Candler Building, Atlanta, and with the Engineering News-Record, New York City.

Bidders may obtain copies of the specifications from the Purchasing Agent by enclosing check for twenty-five dollars ($25.00) payable to the City of Atlanta, and to be held by him until return of the specifications, in good condition. Blue prints may be had at the cost of printing. The City reserves the right to reject any and all bids.

Purchasing Agent,
City of Atlanta, Georgia.

These Advertisements

are official notices that bids are wanted from other than local bidders.

Maximum competition is desired, and this is assured through Engineering News-Record's large NATIONAL circulation, reaching almost every contractor, dealer, and manufacturer in the country interested in bidding on public work contracts. It is the DOMINANT MEDIUM for advertising contracts for work, material, and supplies for towns, cities, counties, state and government departments, and private organizations.

Official Proposals reaching our New York Office by 10 A. M., Tuesday can usually be printed in the issue out Thursday.

Rate: 40 cents a line an insertion.

Bids: Jan. 13.

Sewage Disposal Plant

Milwaukee, Wis.

Sealed proposals for the construction of a Sewage Disposal Plant will be received by the Sewerage Commission of said city at its offices in the City Hall until 1:30 o'clock P.M. of the 13th day of January, 1922, at which time and place during the session of said Commission, they will be publicly opened and read.

The work to be done embraces the construction of the main portion of the Sewage Disposal Plant, consisting of aeration and sedimentation tanks, galleries, conduits, superstructures, piping and all appurtenances connected therewith. The approximate yardage of concrete is 61,500, with 5,000 tons of reinforcing steel to be placed and a large amount of miscellaneous piping.

The time allowed for the completion of the contract shall be eighteen (18) months from the date of the notice of the engineer to begin the work.

The liquidated damages for not completing the work within the time specified shall be One Hundred ($100.00) Dollars for each day in excess thereof.

Each proposal submitted must be accompanied by a cash deposit or certified check drawn to the order of the Sewerage Commission of the City of Milwaukee, to the amount of Twenty-five Thousand ($25,000.00) Dollars.

Specifications and blank forms of proposals can be obtained and detail plans examined at the offices of the Sewerage Commission. A full set of plans and a copy of the specifications will be sent to any contractor upon the receipt of Twenty-five ($25.00) Dollars, which amount will be refunded upon the return of the plans in good condition, provided such return is made on or before the expiration of 30 days after the date of receiving bids.

The Sewerage Commission reserves the right to reject any and all proposals submitted.

JOHN H. FOWLES,
Secretary.

Countersigned:
LOUIS M. KOTECKI,
City Comptroller.

Bids: Jan. 31.

Paving

Lake Wales, Fla.

LAKE WALES, FLORIDA: Will let about 175,000 square yards street paving on January 31st at 2 o'clock P. M. Plans and specifications on file on and after January 10th at office of Town Clerk M. M. Ebert; also offices of J. W. Turner, Engineer, Lakeland, Fla.

Bids: Jan. 4.

East Side Storm Sewer

Dearborn, Mich.

Sealed bids will be received at the office of the village clerk, Dearborn, Michigan up to 8 p. m. of the 4th day of January, 1922, for the furnishing of all materials and labor necessary to construct the East Side Storm Water Sewer. Sewer to be built in tunnel. The following are the approximate quantities:

707 ft. of 4 ft. 9 in. sewer.
339 ft. of 4 ft. 6 in. sewer
815 ft of 3 ft. 9 in. sewer
487 ft. of 3 ft. 6 in. sewer
7 manholes
One concrete abutment and apron.

Plans and specifications are on file at the office of the village clerk and copies may be secured from the office of C. W. Hubbell, Consulting Engineer, 2348 Penobscot Bldg., Detroit, Michigan. A deposit of $10.00 will be required for a set which will be refunded upon their return in good order on or before January 14, 1922.

A certified check made payable to the Village of Dearborn for the sum of $2,500.00 must accompany each bid. In case of failure or neglect to enter into contract and furnish the required bonds, the certified check shall be forfeited to the Village of Dearborn as liquidated damages.

No proposals will be received unless made on the blanks furnished by the consulting engineer and delivered to the village clerk on or before 8 P. M., January 4, 1922.

The village reserves the right to reject any or all bids. By order of the village commission.

FRED C. REAMER,
Village Clerk.

Bids: Jan. 11.

Construction, etc.

Middletown, N. Y.

NOTICE TO CONTRACTORS: Sealed proposals for construction, heating and electric work — storehouse at the Middletown State Homeopathic Hospital, Middletown, N. Y., will be received by the State Hospital Commission, Capitol, Albany, N. Y., until 3 o'clock P.M., on Wednesday, January 11, 1922, when they will be publicly opened and read. Proposals shall be enclosed in an envelope furnished by the State Architect, sealed and addressed and shall be accompanied by a certified check in the sum of five per cent (5%) of the amount of the proposal. The contractors to whom the awards are made will be required to furnish surety company bond in the sum of fifty per cent (50%) of the amount of the contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specifications Nos. 3817, 3818 and 3819. The right is reserved to reject any or all bids. Drawings and specifications may be examined and inspected at the Middletown State Homeopathic Hospital, Middletown, N. Y.; at the New York Office of the Department of Architecture, Room 618 Hall of Records Building and at the Department of Architecture, Capitol, Albany, N. Y. Drawings, specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y. upon reasonable notice to and in discretion of the State Architect, L. F. Pilcher, Capitol, Albany, N. Y.

L. M. FARRINGTON,
Secretary, State Hospital Commission.
Dated: December 13, 1921.

Bids: Jan. 4.

Dredging

Belzoni, Miss

Sealed bids will be received until one o'clock P. M., Wednesday, January 4th, 1922, by the Commissioners of the Belzoni Drainage District at their offices in Belzoni, Mississippi, for the redredging and cleaning out of about 100 miles of dredged ditches.

The right is reserved to reject any and all bids.

Further information upon request.

S. CASTLEMAN, President
C. E. MILLER, Engineer.

Volume 87 New York, December 29, 1921 Number 26

Engineering News-Record

A CONSOLIDATION OF ENGINEERING NEWS AND ENGINEERING RECORD,
WITH WHICH IS INCORPORATED THE CONTRACTOR

E. J. MEHREN, *Editor*

Variety of Movements Occur in Concrete Test Highway 1048

CRACKS IN PAVEMENT COME ON CRESTS of longitudinal waves. Edges curve up in daytime and down at night. Test continuing.

Egineering News-Record, December 29, 1921. 7 cols. Ill.

Keeping Track of Chlorine Cylinders 1051

Engineering News-Record, December, 29, 1921. 1 col. Ill.

International Division of St. Mary and Milk Rivers 1052

ORDER OF JOINT COMMISSION allotting waters for irrigation and power to United States and Canada—with comment.

Engineering News-Record, December 29, 1921. 3½ cols.

Kings River Water-Right Litigation Halted by Engineer's Plan 1053

Engineering News-Record, December 29, 1921. ¾ cols.

London's Rapid Transit Mail Distribution System 1054

CONSTRUCTION NOW GOING ON. Automatic electric trains to be transporting units. Twelve post offices to be linked.

Engineering News-Record, December 29, 1921. 1¾ cols. Ill.

Sunken Dredge Raised by Jacking from Dry Dock Pontoons 1056

BY JAMES H. POLHEMUS.

FOUR PONTOONS lying on the quarters swing hull in rope slings. Steel truss stiffens dredge against damage.

Engineering News-Record, December 29, 1921. 5 cols. Ill.

Erection of Steel Building and 150-Ft. Truss 1058

BY W. J. HOWARD.

SPECIAL METHODS for huge truss. Derrick on first floor with long boom places framing for six stories and roof.

Engineering News-Record, December 29, 1921. 4 cols, Ill.

Loss of Head as a Criterion for Washing Filters 1060

BY JAMES W. ARMSTRONG.

ARBITRARY TIME INTERVAL between washes replaced by a rational standard obtained by a new turbidity detector.

Engineering News-Record, December. 29, 1921. 1¼ cols. Ill.

Concrete Armored Piles in Wharf at Port Orford, Ore. 1061

METAL PIPE DRIVEN to serve as forms. Brackets in piles insure desired thickness of concrete at ground line.

Engineering News-Record, December 29, 1921. 2 cols. Ill.

Utilizing Gas from Sewage Sludge as Motive Power 1062

BY JOHN D. WATSON.

Engineering News-Record, December 29, 1921. 5 cols.

Rectangular Enginehouse with Interior Turntable 1064

TWO CANADIAN RAILWAYS adopt novel plan to reduce winter trouble at terminal by putting turntable under cover.

Engineering News-Record, December 29, 1921. 4 cols.

Water Works Shares in Exhibit of St. Louis City Activities 1066

BY T. CHIVVIS.

Engineering News Record, December 29, 1921. 1 col. Ill.

The Probable Frequency of Given Rates of Rainfall 1067

BY ADOLPH F. MEYER.

AVERAGE-RATE METHOD more economical for design of public works than uniform. Intensity method. Data reviewed.

Breakwaters of Three Types in One Lake Harbor 1069

RUBBLE MOUNDS, concrete caissons and rock filled pile cribs for U. S. Naval Station at Great Lakes, Ill.

Engineering News-Record, December 29, 1921. 4½ cols. Ill.

Editorials 1045

Letters to the Editor 1072

Hints for the Contractor 1075

News of the Week 1076

Weekly Construction Market 1084

Construction News 281

Directory of Consulting Engineers 118

What and Where to Buy 122

Searchlight Section 58

Index to Advertisers 128

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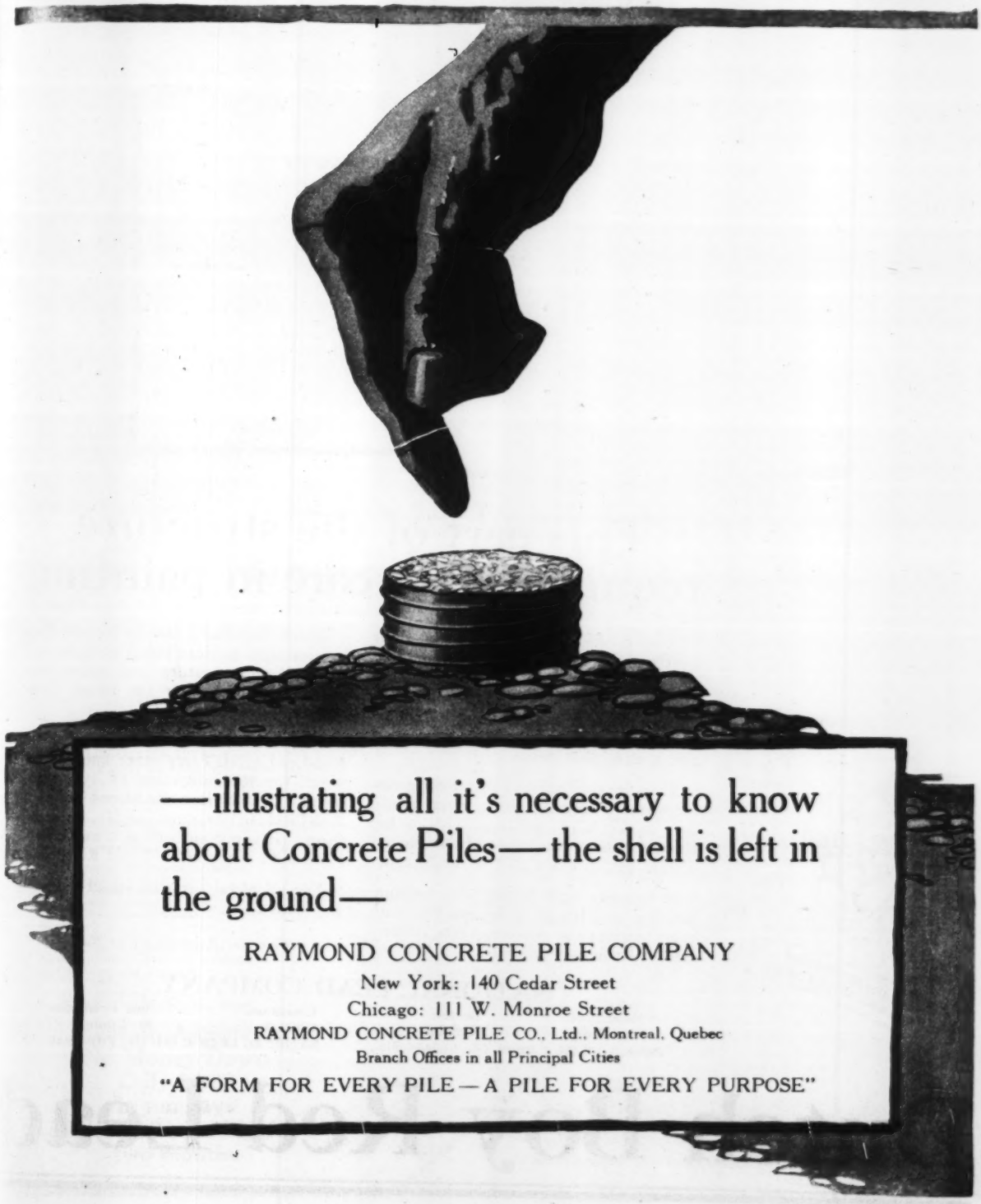
Canada: Drummond & Reeves, Ltd., 43 Jarvis St., Toronto

HAVEMEYER SERVICE

RAYMOND



—illustrating all it's necessary to know about Concrete Piles—the shell is left in the ground—

RAYMOND CONCRETE PILE COMPANY

New York: 140 Cedar Street

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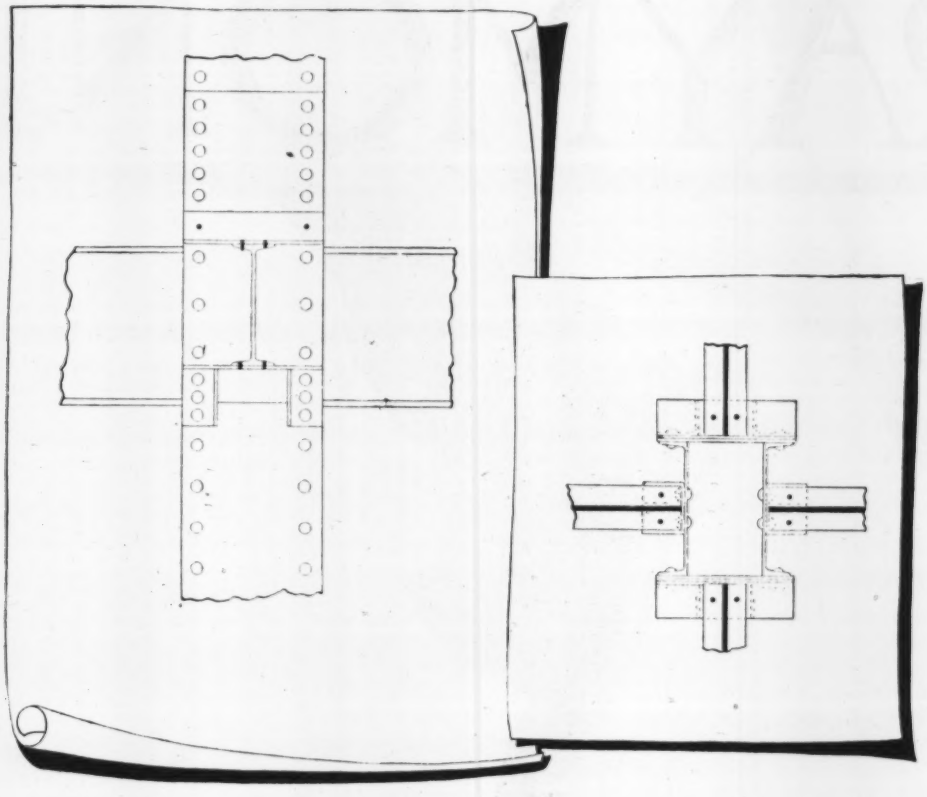
RAYMOND CONCRETE PILE CO., Ltd., Montreal, Quebec

Branch Offices in all Principal Cities

"A FORM FOR EVERY PILE—A PILE FOR EVERY PURPOSE"



This part of the structure requires extra care in painting

A good shop coat of Red-Lead—that goes without saying. On erection, two more coats of Red-Lead should go on, and it can be obtained and applied in various dark colors, such as brown or green or black, to facilitate inspection and to suit color ideas.

Framing connections call for the greatest care—joined surfaces, rivet heads, etc., make hard painting with a big chance of poor covering—and they should always get an extra coat of Red-Lead.

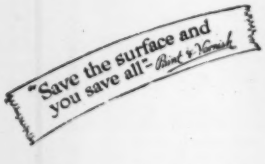
A common sight is that of a building skeleton or a bridge under erection with fresh bright paint marking every connection of beam and column.

Dutch Boy Red-Lead can be relied on to stick tight to clean metal surfaces and to keep out moisture and deleterious gases, thus protecting the metal from rust and corrosion.

Tests of all kinds have proved that Red-Lead excels every other known material for the protection of structural metal. Dutch Boy Red-Lead is pure Red-Lead in its most highly oxidized form. It is put up both as a convenient paste and a ready-to-use liquid Red-Lead.

For all metal surfaces, specify Dutch Boy Red-Lead.

Write for Painting Helps No. 5



NATIONAL LEAD COMPANY

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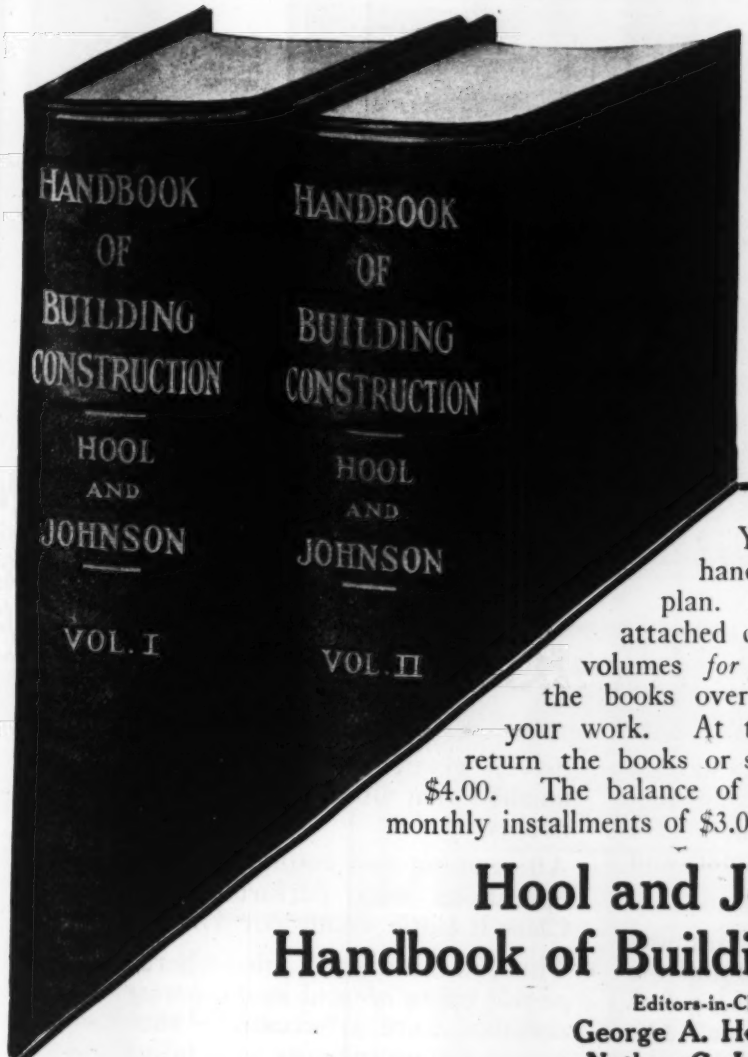
JOHN T. LEWIS & BROS. CO., Philadelphia NATIONAL LEAD & OIL CO., Pittsburgh

Dutch Boy Red-Lead



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A work without a parallel—a great achievement of technical authorship.

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10—Architectural Practice
11—Contracts
12—Specifications
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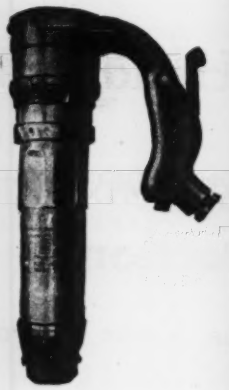
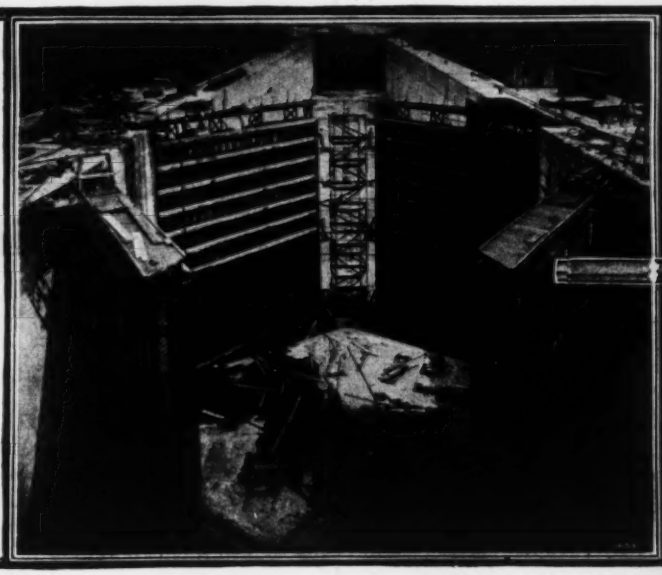
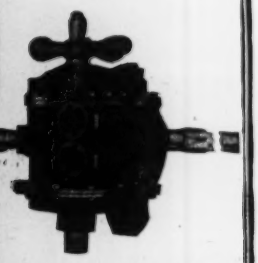


Boyer Riveting Hammer, No. 50, with inverted handle. Used in the exceedingly heavy work of all compartment riveting.



Type "E" Little Giant Air Drill. Used exclusively for reaming and countersinking.



General Illustration shows the Industrial Canal, New Orleans, La., construction of which was supervised by Mr. A. Toohey for McClintic-Marshall Company, contractors. 2700 tons of steel and 300,000 7-8-inch rivets were used in its fabrication.

Boyers and Little Giants do Big Jobs Well

THIS canal, requiring 300,000 7/8-inch rivets in its fabrication, was built with the aid of Boyer Riveting Hammers and Little Giant Air Drills.

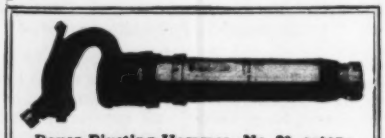
Two types of Boyer Hammers were used—the No. 80 and the No. 50. The No. 80 was used on general riveting operations. The No. 50, with inverted handle, drove all inside compartment rivets.

A number of rivets were countersunk and ground to a finish. Each Boyer-driven rivet was so perfectly finished that little grinding was necessary.

All reaming and countersinking operations were performed by Class E Little Giant Air Drills.

Thus, on this difficult job—where *perfect rivets, air* and *maintenance economy*, were a necessity—the exacting requirements were fully met.

What are *your* needs? Name them—there's a Boyer or Little Giant to fulfill them. Ask for bulletins.



Boyer Riveting Hammer, No. 80, extensively employed in building this canal.

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P-142

BOYER PNEUMATIC HAMMERS··LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
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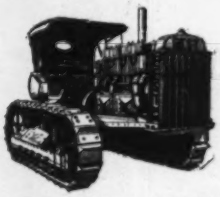
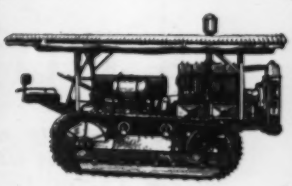
CHICAGO *Depend upon* CANADIAN CP PNEUMATIC PNEUMATIC *that Name*

There are three models of Best Tractors—the "Cruiser" (60), the "Thirty" and the "Sixty." All are factory-built —not assembled.



Best "Cruiser" (60)

Best "Thirty"



Best "Sixty"

Tractor Power in Road Building

Time is the essence of most contracts. By keeping pace with his schedule, by jumping ahead a few steps when possible, the road builder is able to get through the job clean and with his profit tucked away in the bank.

And it is right here that dependable BEST TRACTORS show their real value to the road-maker. BEST TRACTORS save time. They provide profit insurance. To begin with, work can be started or carried on in weather and with soil conditions that would keep animals off the job and in the stalls. The long, wide tracks enable BEST TRACTORS to work on soft, rough or sandy soil. Enforced idleness is reduced to the very minimum.

Then, with work under way, the tractor operates the elevating grader, the plow, scarifier, scrapers, blade graders and other tools at regular speeds and maximum capacities. No time is lost for frequent rests. No work is slighted because of tough going or tired animals. In fact, with BEST TRACTORS the contractor or engineer can map out for himself a shorter schedule than is possible where animals furnish the mobile power. And he does a better, cleaner piece of work.

BEST TRACTORS provide the engineer and contractor with reliable power in compact form, easy to maneuver, and managed by one man. Dependability, power and low cost of operation are proven qualities in BEST TRACTORS, the result of BEST design, choice of materials and workmanship. These, in turn, are the products of many years of successful tractor-building experience.

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Let us send you further information on the use of tractors; also specifications, prices and names of nearest dealers.

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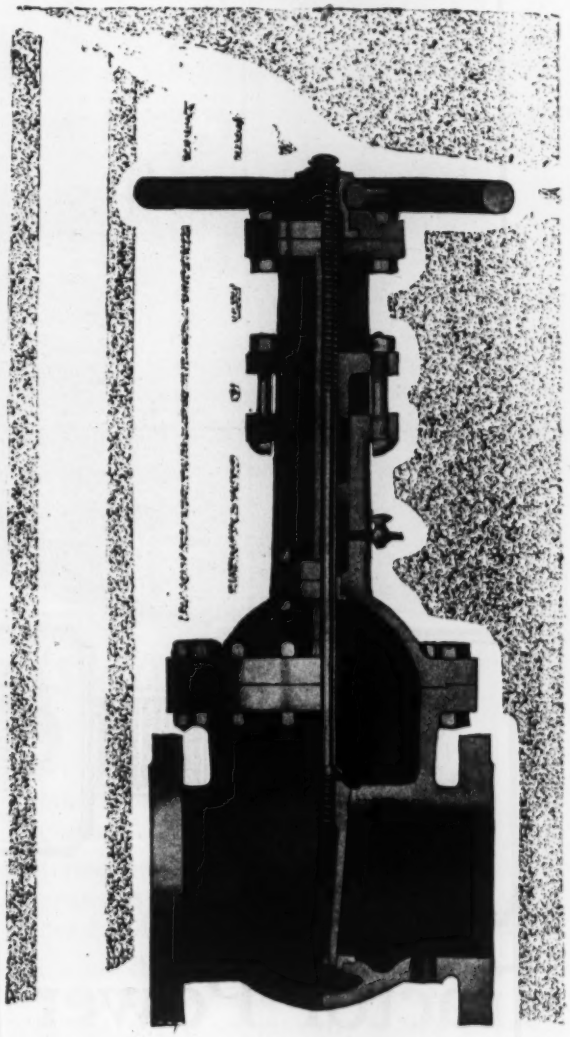
Performance and Reputation Count



This Guaranty applies to the Chapman List 63½ Cast Steel Gate Valves for Superheated Steam.

"Why should we experiment with other valves when we know that we can always get Chapmans?

"We have passed the experimental stage and have found that a Chapman Valve always delivers. And whenever there is any kind of an improvement in valve design or construction it usually appears first with the CHAPMAN trade mark."

The Engineer who said this is only one of many who make their selection from the Chapman Valve Handbook No. 38.

Have you your copy?

BRANCHES:

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Chapman Valve Mfg. Co.,
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Owner would not take chances on blasting—
"And we had to take out several old foundations laid in Portland cement (the one shown in the foreground was 18 inches thick).
"So we had to break it up with the ERIE—and she went right through it."—*Thomas Brown Contracting Co., Buffalo, N. Y.*
Instead of Dynamite
HOHN & HUNTER CO
LAUNDRY

***Excavation for Loew's New State Street** Theatre, Washington and Mohawk Streets, Buffalo.*

You will feel this way, too when you own an Erie!—

"After using other steam shovels for years, we purchased our first ERIE in 1915. We have found the ERIE Shovel far superior to any other shovel on the market, in every way, shape and form. It works faster and is more durable, which means better results."—*Thomas Brown, President, Thomas Brown Contracting Co., Buffalo, N. Y.*

MORE POWER: Contractors who own different makes of steam shovels nearly always select their ERIES for the hardest digging. This is the general practice—you see it everywhere—and it speaks for itself!

MORE ENDURANCE: Owners report that their ERIES average less than one-third as much upkeep cost as their other shovels. The ERIE is built with extra strength at every point of wear and strain.

GREATER SPEED: Faster swing; faster "crowd"; simple control, with only 3 levers for all digging and dumping operations.

LARGER OUTPUT: It is a common occurrence for ERIE Shovels to deliver 30% to 40% more actual yardage than other shovels on the same digging. Check this up for yourself—get figures direct from the owners.

We will be very glad to send you actual records, in proof of the statements made above. Just write and tell us what class of work you are interested in.

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Branch Offices: NEW YORK, BOSTON, PITTSBURGH, CHICAGO

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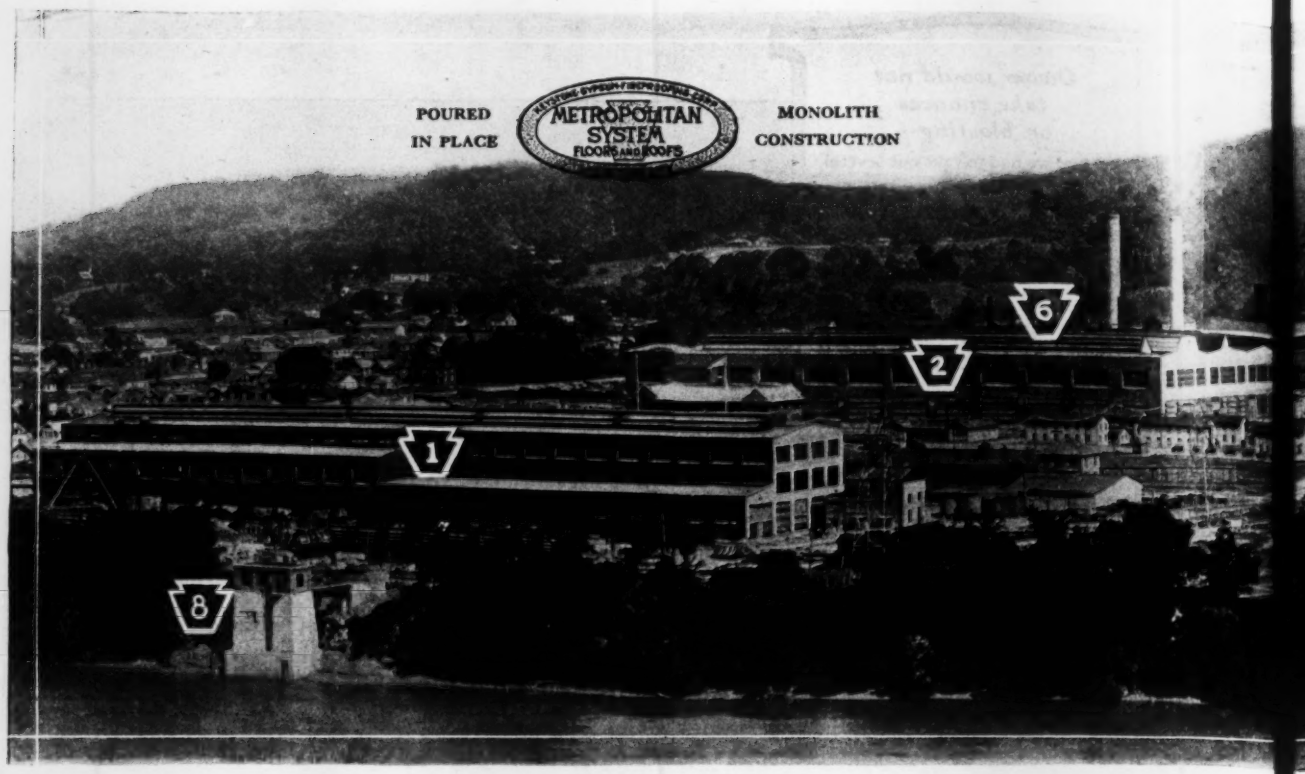
ERIE Revolving Shovels BAL



1—Projectile Shop
2—Machine Shop
3—Substation
4—Forge and Furnace
5—Open Hearth
6—Heat Treatment
7—Boiler House
8—River Pump Station

Form C—as used for roofs of plant shown.

U. S. Naval Ordnance Plant

South Charleston, W. Va.

905,450

square feet of poured gypsum roofing

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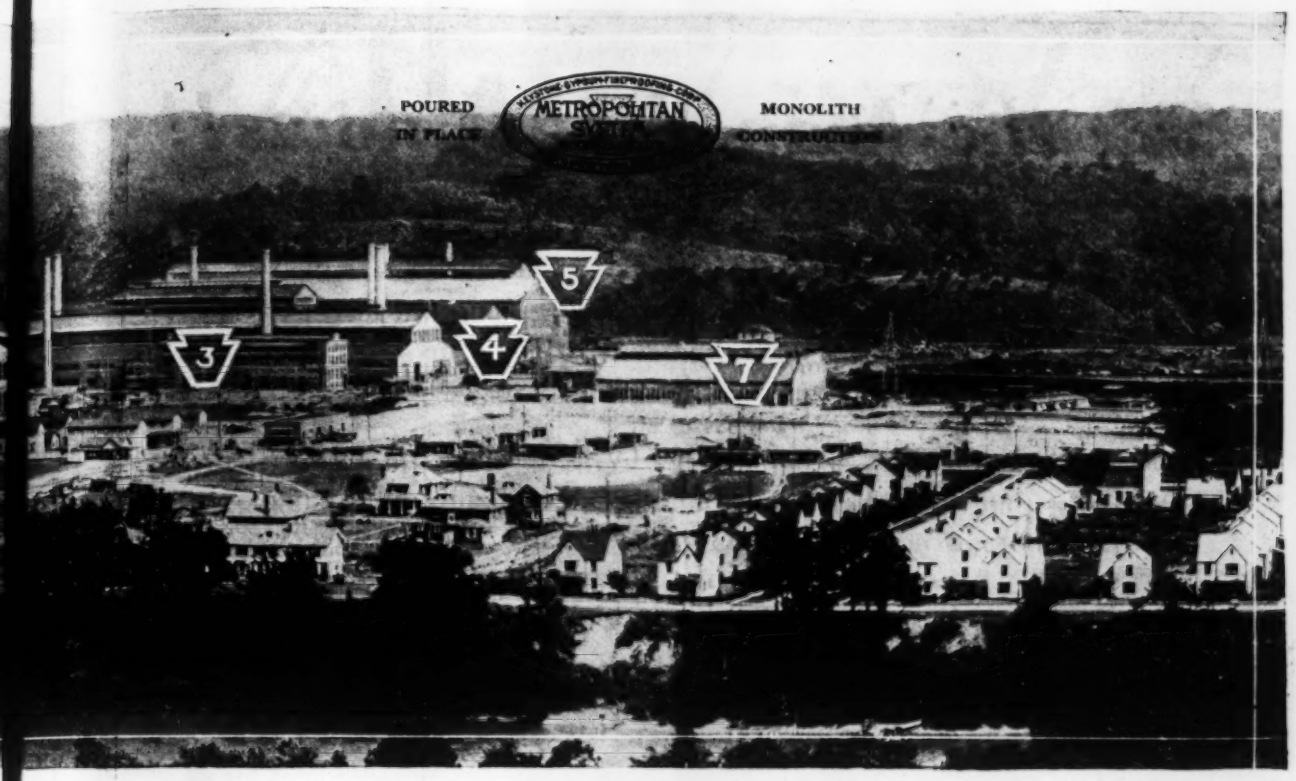

The Largest Poured Gypsum Roof Contract ever let by the Government

On December 1st this contract was 96.2% finished, according to Government record.

Battleship Construction may be stopped but Metropolitan Roofing goes on forever

Form B—as used for floor construction elsewhere.

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Ask the Man Who Knows!!

Last week we showed you a photograph of Grand Central Station, New York, and asked you to visit this structure and see for yourself how Gunite protects steel.

Perhaps you do not get to New York and would like to know that the engineers of the City of Chicago, who have had longer experience with Gunite than any other engineers, specified that all the steel underneath the new Michigan Boulevard River Crossing should be covered with Gunite.

Visit this structure and see for yourself.

Gunite is hydrated at the nozzle of the

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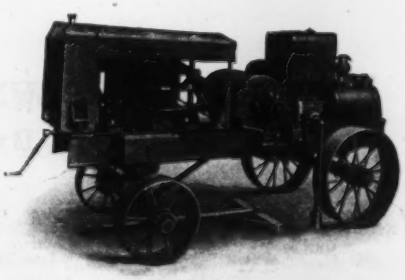
All inquiries except from the United States and its possessions, Canada, Mexico and Cuba, should be taken up with the International Cement-Gun Company, 50 Maria Plaats, Utrecht, Holland.



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The HAISS Creeper Loader is a good purchase

For you or for anyone else whose work has to do with handling stone, sand, gravel or other loose material—it *cuts costs* 75% over other machines and methods.

And it is so reliable. It is built sturdy and strong beyond precedent, and embodies certain exclusive features that immediately win the favor of those who are keen for economy of operation and performance.

It loads at the rate of a yard and a half a minute at a power cost of 1 cent per yard of material handled. There is no theory about it—it's a good business proposition for any material handler.

A Word With the Haiss Engineer

"The self feeding device of all Haiss Loaders is positive acting. It does not depend for its effectiveness on the cohesion of the material—it does not interfere with the functioning of the buckets, nor does it necessitate backing in and out for 'cleaning up.' It moves the material directly in the path of the buckets and it 'cleans up' clean."

This feature is exclusive in Haiss Loaders. It is but one of their advantages. The Haiss Engineer will tell you of others from time to time. Watch this page.

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MATERIALS HANDLING EQUIPMENT
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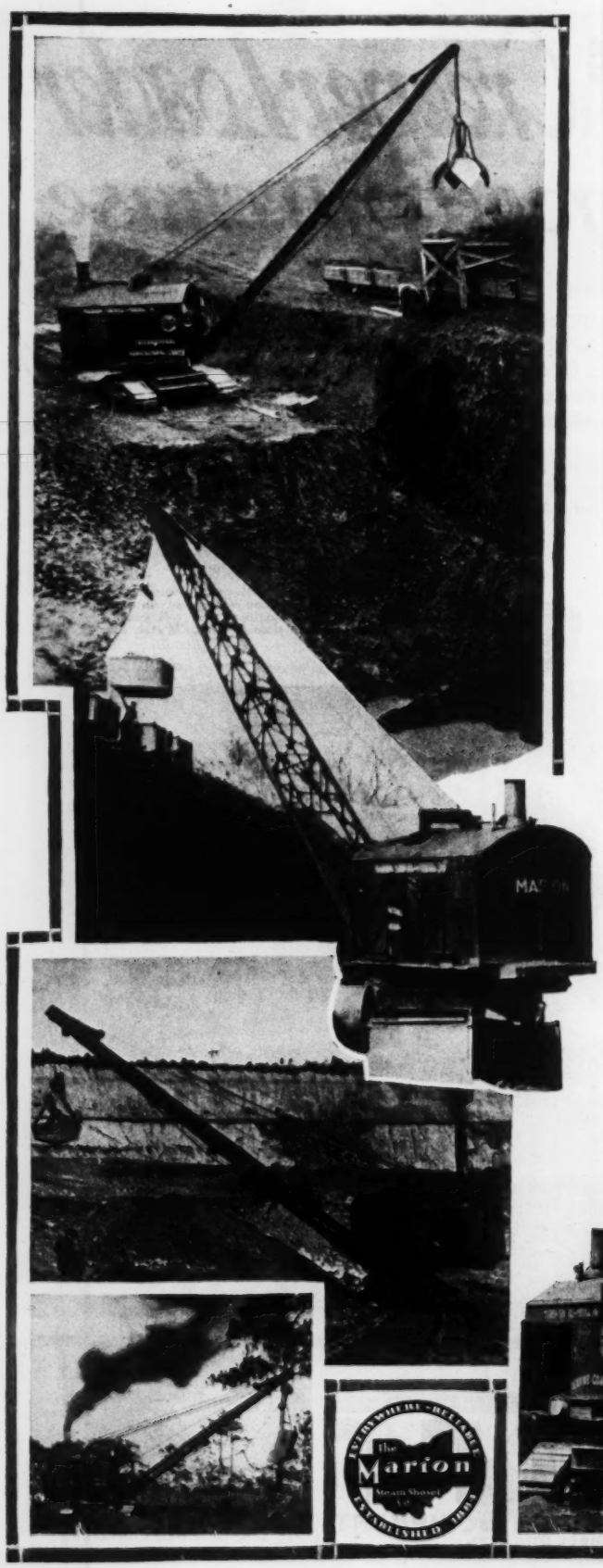

This Versatility *of* MARION Revolving Shovels

is of Inestimable Value to the general contractor

Every revolving Marion Shovel can be converted easily and quickly, into Dragline, Clamshell or Orangepeel Excavator or Crane. They are designed for this conversion because it enables the operator to handle a great range of work with one machine. And in each operation Marions have steam-shovel strength and efficiency.

For small drainage and irrigation ditches they give capacity and economy; also wider working range and ability to deposit material at a greater distance from the ditch. For building levees handling sand and gravel from wet pit, making fills. High lift for basement and other wide-range work. Also as a pile driver.

THE NEW AND THOROUGHLY ILLUSTRATED MARION BOOKLET gives the complete story of Marion versatility and individual points of merit in Marion Shovels and other Excavating Machinery. We shall be glad to send you a copy.

The Marion Steam Shovel Company

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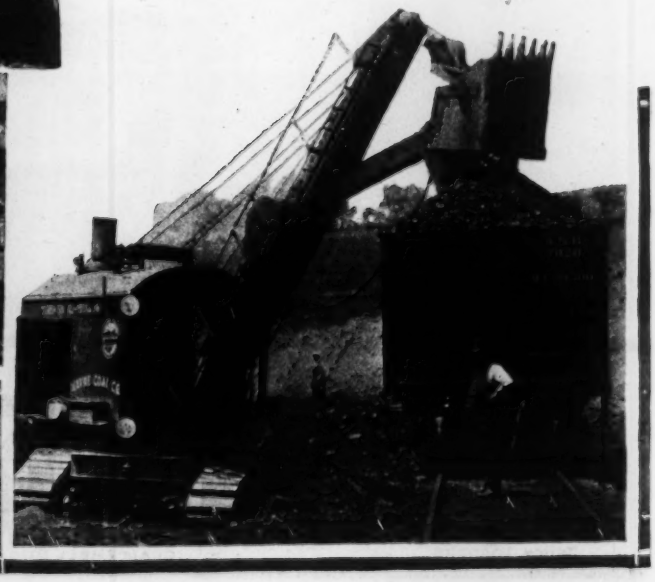

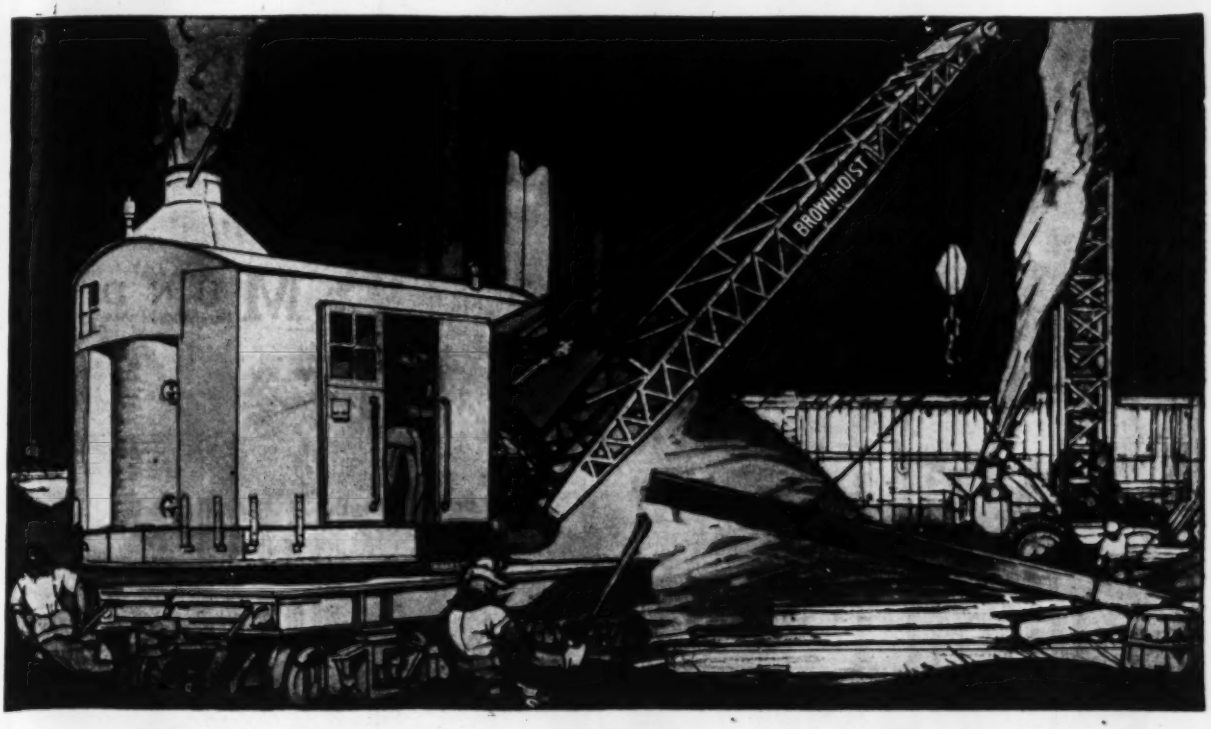

Brownhoist Cranes Help Build New Cadillac Plant

In building the new modern plant where Cadillac Motor Cars are now made, six Brownhoist Cranes aided in speeding up construction immeasurably.

These cranes helped push construction all the time. Working with buckets, they moved gravel, sand and coal. Working with bottom block they sped-up the handling of forms and girders.

On any job where speed and handling costs are factors, Brownhoist Cranes give definite evidence of their ability, speed and sturdy strength.

Whether your handling job be large or small there is a Brownhoist to fit your need. Write for our Crane booklet. It shows many money-saving uses for Brownhoist Cranes.

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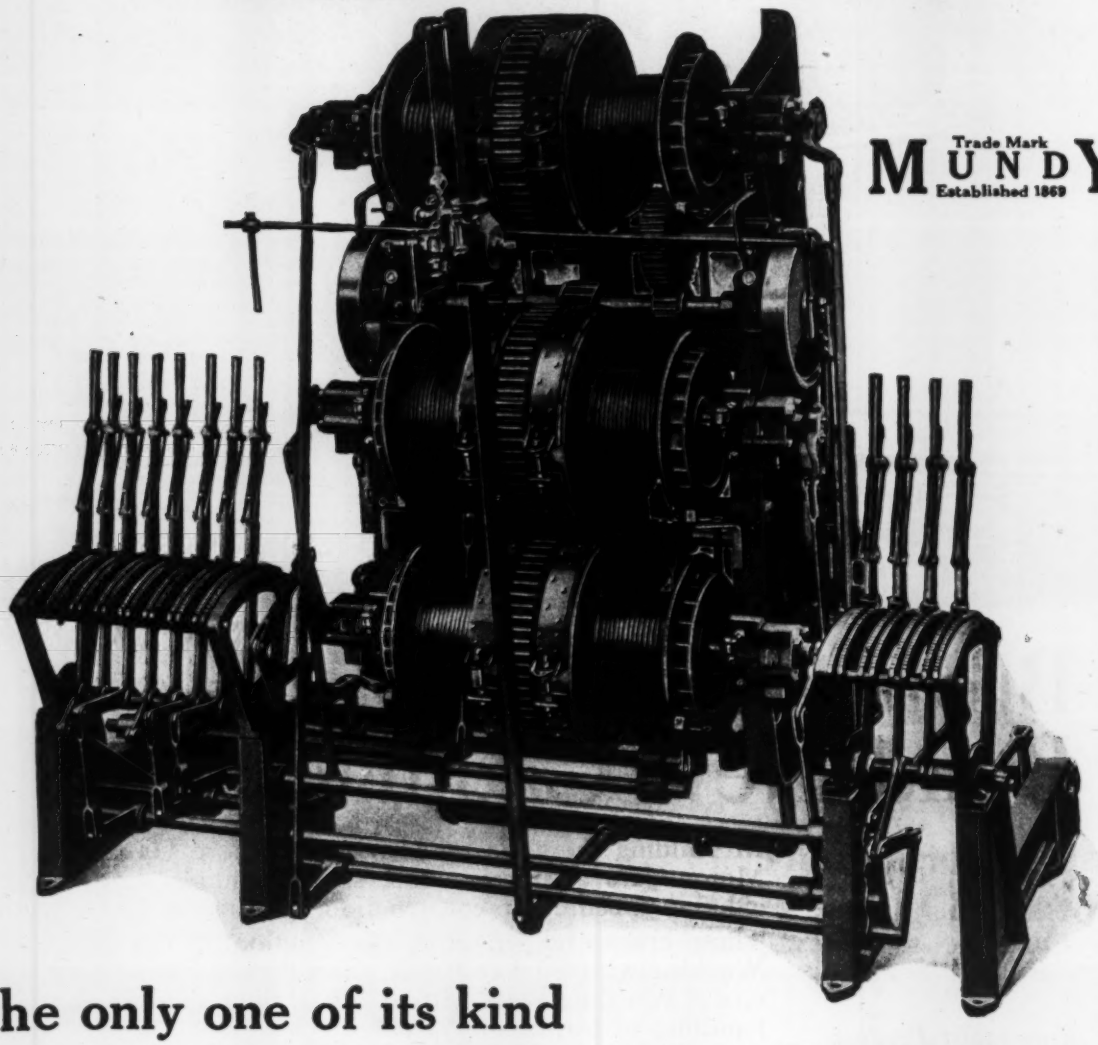
BROWNHOIST

MATERIAL HANDLING MACHINERY

ESTABLISHED 1869



Trade Mark
MUNDY
Established 1869

The only one of its kind

This 7¼ in. x 10 engine was built for the Merrit and Chapman Derrick and Wrecking Company, and installed on their wrecking boat "Resolute."

The uppermost drums are slow speed for trimming boom, middle drums are for operating boom, lower drums for light fast cargo hoisting.

Typical of what our engineers produce when special work is required.

Send for Catalog No. 16 fully describing this engine.

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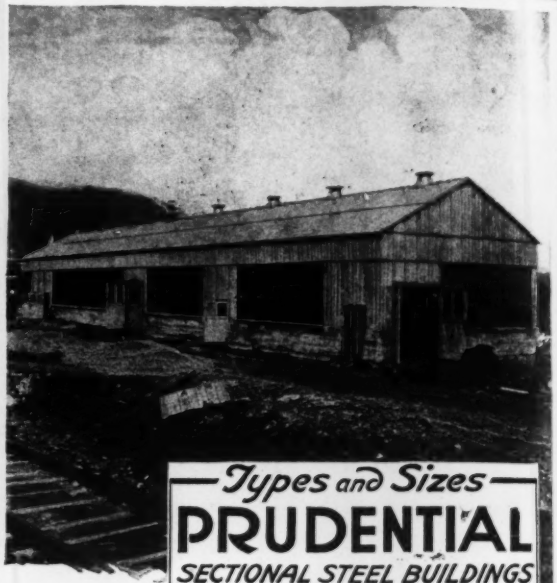
MOVES THE EARTH—
MIXES THE CONCRETE
REG. U.S.
PAT. OFF.

Everything's going up in smoke. How long will it take us to rebuild our plant?



Right:—Prudential Sectional Steel Building erected by the Consumers Mining Co., and used as a blacksmith shop.

Prudential Steel Buildings are Ready for Immediate Delivery

When fire or other disaster results in a building problem—where immediate delivery of fireproof, serviceable and lasting buildings is imperative—WIRE BLAW-KNOX.

As soon as your order is received a chain of motion is established which begins in our stock rooms and ends in your yards. There is no engineering to be done—no drawings to be made and changed—nothing but the selection of standard steel parts of cover, frame and equipment.

All buildings meet your exact specifications and are SHIPPED FROM STOCK.

Among many representative firms who use Prudential Buildings for every conceivable purpose from storage to power houses, are—

Worthington Pump Co.
Penna. Casting & Machine Works
City of Baltimore
C. & O. Railroad
Black Products Co.
Rockland & Rockport Lime Co.
Boston Consolidated Gas Co.

PRUDENTIAL HIGH LIGHTS

All cover sheets press formed and galvanized.
A size for every need.
Structural steel frame made in our own shops.
Prudential Buildings have 100% salvage value.
Patented leakproof construction.
All parts standard.

BLAW-KNOX COMPANY

601 Farmer's Bank Building, PITTSBURGH, PA.

New York
Chicago
Boston
Detroit
Baltimore
Kansas City
Birmingham
San Francisco

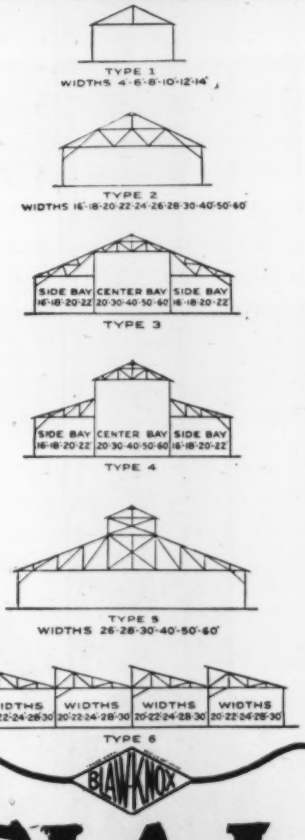
SEE OUR EXHIBIT

of Blaw-Knox Equipment for Road Builders at 13th NATIONAL GOOD ROADS SHOW A.R.B.A. Booths 106, 107, 108, 130, 131, 132. To be held in the Coliseum, Chicago, Ill., January 16th to 20th inclusive. Our representatives there will be at your service.

Types and Sizes

PRUDENTIAL

SECTIONAL STEEL BUILDINGS



BLAW-KNOX

PRUDENTIAL

Steel BUILDINGS *Sectional*

Wisconsin

CONSISTENT

Furnishes Emergency Power on the longest Single-Leaf Bascule Bridge in the World.

An outstanding example of the unusual range of users to which Wisconsin motors can be successfully applied is found in the St. Charles Air Line bridge across the Chicago River —the longest single leaf bridge yet built, 260 feet between trunnions and end bearings. It is of the Strauss type, superstructure design and plans being made by the Strauss Bascule Bridge Company. Total weight of the steel, 1544 tons.

A 60-hp. Wisconsin motor, used in a Norwood-Noonan gasoline bridge unit, is used for emergency power. Norwood-Noonan standardize Wisconsin motors for their unfailing dependability and reliability in this important service.

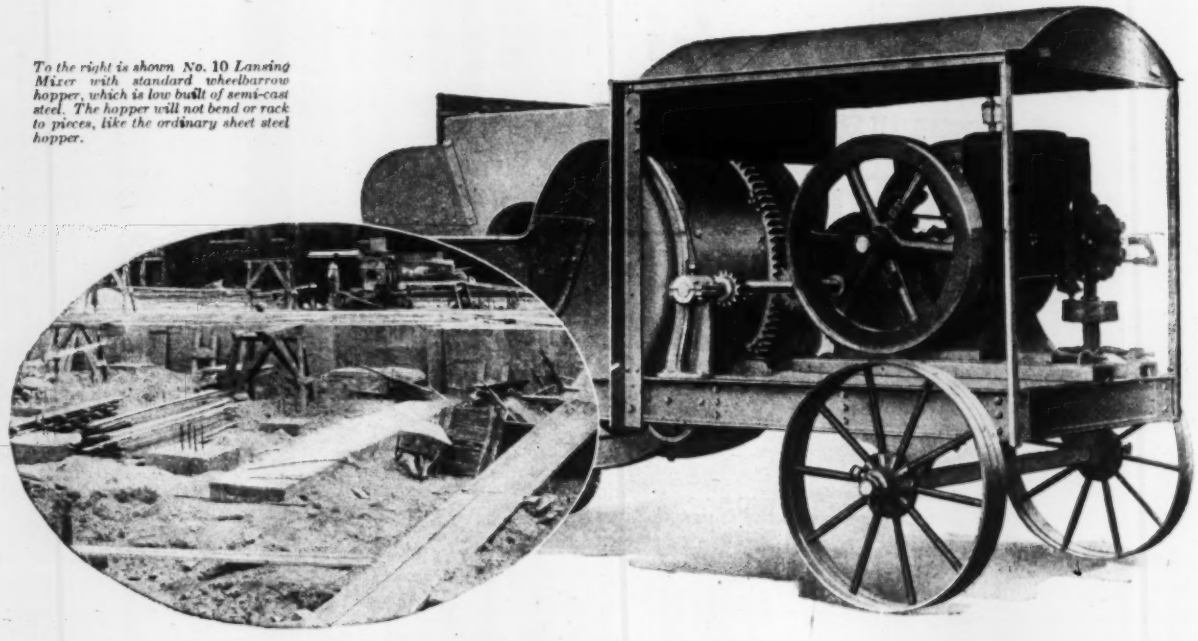
For range of application, for versatility, and for consistency second to none, Wisconsin motors gives results that manufacturers of industrial equipment find exactly suited to their products.

Our industrial bulletin gives full details concerning the application of Wisconsin motors to industrial requirements. Your copy is waiting to go out.

WISCONSIN MOTOR MANUFACTURING CO
Milwaukee, Wisconsin.

A typical Norwood - Noonan gasoline engine bridge unit. Other Norwood-Noonan products are gasoline engine-dynamo outfits. Wisconsin Motors have been found to be biggest in service and general value, whenever used in such units. You can't go wrong with a Wisconsin.

To the right is shown No. 10 Lansing Mixer with standard wheelbarrow hopper, which is low built of semi-cast steel. The hopper will not bend or rack to pieces, like the ordinary sheet steel hopper.



STANDARDIZE ON LANSING

Make sure that your wheelbarrows, hoists, concrete carts, material elevators, scrapers—as well as your concrete mixers—bear the Lansing name.

Standardization on Lansing products assures contractors that their equipment is built right and priced right.

Here are Lansing facts regarding construction, price and service:

CONSTRUCTION—The Lansing line of contractors' equipment assures dependable, standardized quality—the best design, materials and workmanship that can be produced by an organization that has specialized in the manufacture of concrete mixers, hoists, carts, elevators, wheelbarrows, etc., for nearly 40 years.

PRICE—The Lansing Company buys thousands of tons of steel annually. Other raw materials are purchased on a big quantity basis. A tremendous saving is effected. Then, too, with our own foundry and machine shop, the entire Lansing line is built in our own plant. You receive the benefit of our low manufacturing cost, which brings our selling price down to a level that cannot be reached by the smaller manufacturer of a product of equal quality.

SERVICE—Besides large repair stocks in our eight branches, Lansing dealers in all sections of the country are required to carry spare parts. As a result, owners of Lansing Mixers and other contractors' equipment are enabled to take advantage of service arrangements which for extent and thoroughness are unequalled. The Lansing Company insures prompt service to all contractors—in New England as well as on the Pacific Coast.

Write for Catalog

Let us send you complete information about the Lansing line of contractors' equipment. Our engineers are particularly well qualified to co-operate with contractors intelligently. Write for our 50 page mixer catalog.

LANSING-COMPANY

26 North Cedar St., Lansing, Mich.

Complete stock of Lansing Contractors' Equipment Carried in the following Branches:

Chicago, Boston, New York, Philadelphia, Minneapolis, San Francisco, Kansas City, Detroit.

Branch Manufacturing Plant: Poughkeepsie, N. Y.

(7)

LANSING COMPANY

CONCRETE MIXERS - CONTRACTORS' EQUIPMENT

ROAD MULTI FOOTE PAVER
TRADE MARK REGISTERED

Foote Service

No one knows better than Foote what first-class service means to the contractor. The MultiFoote Paver is built in the east but is used and sold in every part of the country.

Every one of our agents carry a complete stock of replacement parts and can supply you on a moment's notice with whatever equipment you may need in order to keep your outfit moving.

The Foote Company serve the Contractor operating in the far west just as they do the operator in the eastern states.

A telegram to the nearest agent and your order goes out on the first express accompanied if necessary by a Foote mechanic.

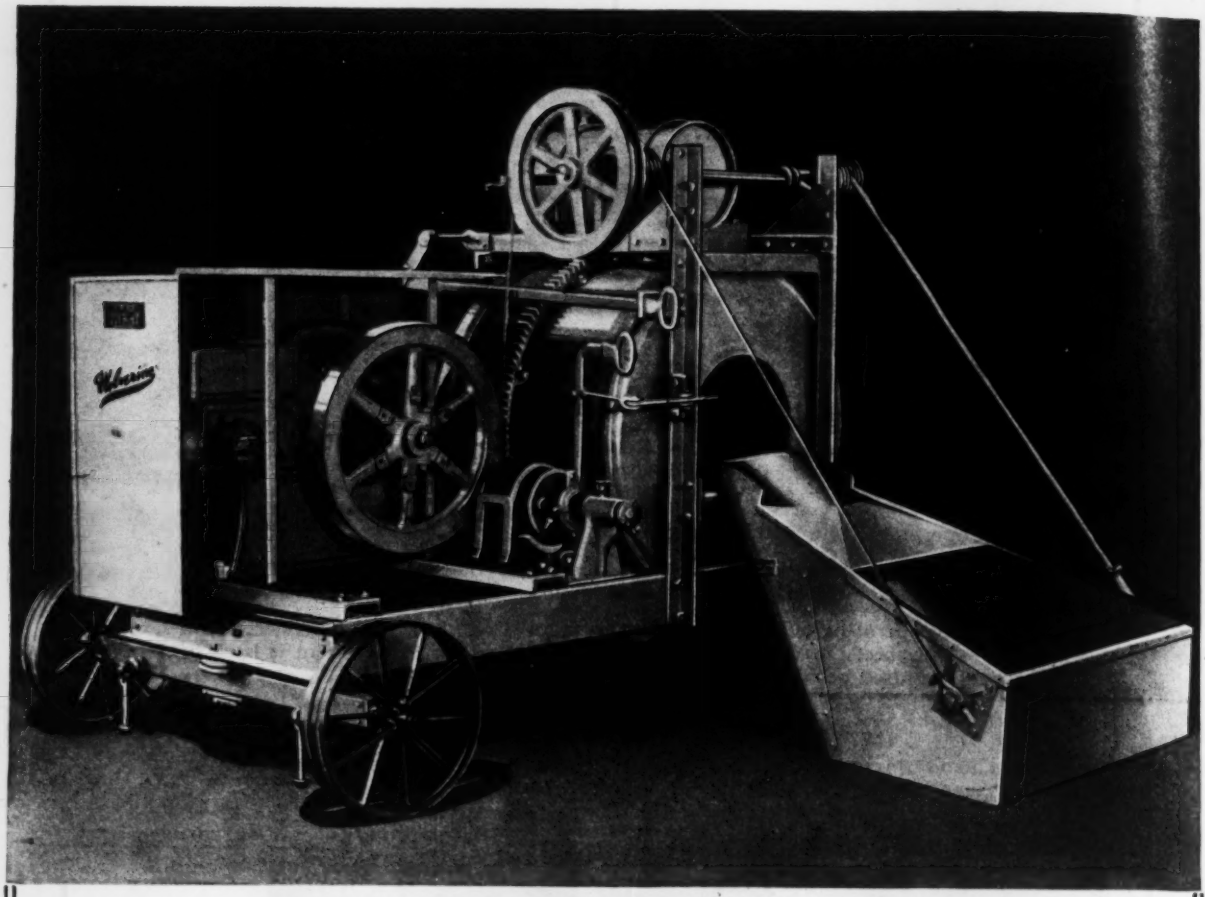
If you are operating a MultiFoote Paver, trouble will be the least concern you have — but should trouble develop you may be sure the Foote Agent is back of you one hundred per cent.

Operating 16 Hours A Day In California

Rogers Brothers Co., of Los Angeles, used a 21 E MultiFoote gas paver in the construction of the Taft-Bakersfield concrete highway this past spring.

They operated two 8-hour shifts. The MultiFoote, a new machine, was run continuously 16 hours a day for 42 working days or over 67 days elapsed time — a remarkable test for a new piece of machinery. They reported no delays due to breakdown of the paver. No. 1 shift *averaged* 587 *feet per day* — No. 2 shift *averaged* 509 *feet per day* of 13-foot concrete road. Write the nearest Foote Agent for complete information and catalogs.

GENERAL AGENTS
Foote Concrete Machinery Co., 1241 Michigan Ave., Chicago, Ill.
Edward R. Bacon Co., 51 Minna St., San Francisco, Cal. Wilcox Bros., Inc., 30 Church St., New York, N. Y.
E. J. McHarg & Co., 3 Crandall St., Binghamton, N. Y. Burton Franklin, Volunteer Bldg., Chattanooga, Tenn.
Made by Foote Co., Inc., Nunda, N. Y.



DISTRIBUTORS

THE C. H. JONES CO., Dooly Bldg., Salt Lake City, Utah.

HATCHER, McKENNA & CO., 3665 Market St., St. Louis, Mo.

GEO. W. FIFE EQUIP. CO., Merchants Bank Bldg., Indianapolis, Ind.

ROBT. ARMSTRONG & BRO., Atlanta, Ga.

CLARKSBURG SUPPLY & EQUIP. CO., 606 E. Pike St., Clarksburg, W. Va.

SPEERS-JEVNE, Eighth Floor, Builders Exchange Bldg., Minneapolis, Minn.

MACHINERY RENTAL & SALES CO., 2918 Southwest Blvd., Kansas City, Mo.

THE G. H. ALWINE CO., 238 Brandeis Theatre Bldg., Omaha, Nebr.

BRIAN & POWERS, Canal Bank Bldg., New Orleans, La.

Quick Deliveries and Service

A Knickerbocker Product

$325.00 F.O.B. Factory for The Wolverine Half-Bag Size Mixer, equipped with 3 hp. engine and magneto, also engine housing and low charging hopper, steel trucks with standard track —may be equipped with batch hopper.

$595.00 F.O.B. Factory for The Wolverine One-Bag Size Mixer, equipped with 5 hp. engine and magneto, steel engine housing, low charging hopper and steel trucks with standard track—may be equipped with power loader, automatic pressure water tank or batch hopper.

Built by

The Knickerbocker Company

400 Liberty Street, Jackson, Michigan

ESTABLISHED 1883

Builders of Knickerbocker Concrete Mixers, sizes 21, 14, 7 and 5 cu. ft. Mortar Mixers and Portable Saw Rigs.

DISTRIBUTORS

THE DAY & MADDOCK CO., W. 82nd St., South of Denison, Cleveland, Ohio.

H. KLEINHANS CO., Union Arcade, Pittsburgh, Pa.

LEWTER F. HOBBS, INC., 113 E. Twelfth St., Norfolk, Va.

TRUMAN M. SMITH, 317 Powers Theatre Bldg., Grand Rapids, Mich.

THE HUBBARD-FLOYD CO., INC., 1112 Grand Central Palace, New York, N. Y.

THE KNICKERBOCKER CO., 709 Arch St., Philadelphia, Pa.

THE HUBBARD-FLOYD CO., Old South Bldg., Boston, Mass.

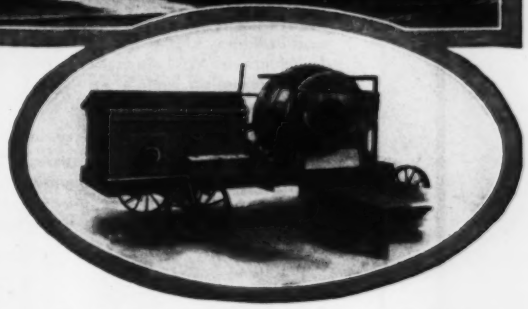
G. W. SIMMONS CO., 118 N. Front St., Memphis, Tenn.

BUHL MACHINE CO., 605 S. Dearborn St., Chicago, Ill.

Quick Deliveries and Service

WE STAND BACK OF IT

GREATER MIXER VALUE—



Two Smith 7-S Mixers Were Used on the Studebaker Housing Project at South Bend

IS NOW TO BE HAD IN SMITH 4-S AND 7-S MIXERS BECAUSE OF RECENT PRICE REDUCTIONS—

But in both these sizes we have maintained the well-known SMITH quality of materials and workmanship.

Due to lower manufacturing costs we are now able to sell these high-grade mixers at low-grade mixer prices.

Equip your jobs with SMITH mixers and be prepared to start work in 1922 with mixers that will profitably produce.

Bulletin 405-A tells how they are built and gives full information regarding their capacities, daily yardages, etc.

Write for your copy of Bulletin 405-A *today.*

SMITH

The T.L. Smith Company

General Sales Offices and Factory:
1155-32nd Street, MILWAUKEE, WIS.

Eastern Office and Warehouse, 50 Church St., New York. *Western Warehouse, San Francisco*

VALUE THAT ENDURES

TELSMITH Builds Wisconsin Roads

These two pictures show a Telsmith crushing and screening plant, operated by Sheboygan County, Wis. Sheboygan is one of the most progressive counties in a state noted for its good roads. Mr. John Ubelohde, Sheboygan County Highway Engineer, ranks very highly among Wisconsin's road builders. Under his management, this plant has produced gravel at a remarkably low cost—probably on the most economical basis of any county or municipal plant in Wisconsin.

Telsmith machinery in this plant is as follows:—

One No. 5 Telsmith Primary Breaker, manganese equipped; One No. 2 Telsmith Reduction Crusher, manganese equipped; One No. 6 Telsmith Belt Elevator 50 ft. centers; One Telsmith Heavy Duty Screen, 40 in. dia. by 16 ft. long.

The Sheboygan County outfit is not an exceptional plant; but merely a fair sample of Telsmith's product. Telsmith engineers analyze the customers' requirements; recommend the proper equipment and design the plant. Telsmith mechanics build all the machinery; and Telsmith guarantees a successful plant. Responsibility is centralized. There are no loop-holes—no alibis. Glad to send you our Catalog No. 155 (Telsmith Crushers) and our Bulletin No. G-P-2 (Telsmith General Catalog, describing screens, washers, bucket elevators, belt conveyors, sand tanks, etc.)

Sheboygan county has purchased 21 properties at suitable locations which are expected to supply sufficient gravel and stone for the next twenty years. In addition to that the county road and bridge committee has taken options on adjoining property which will furnish material for many years longer

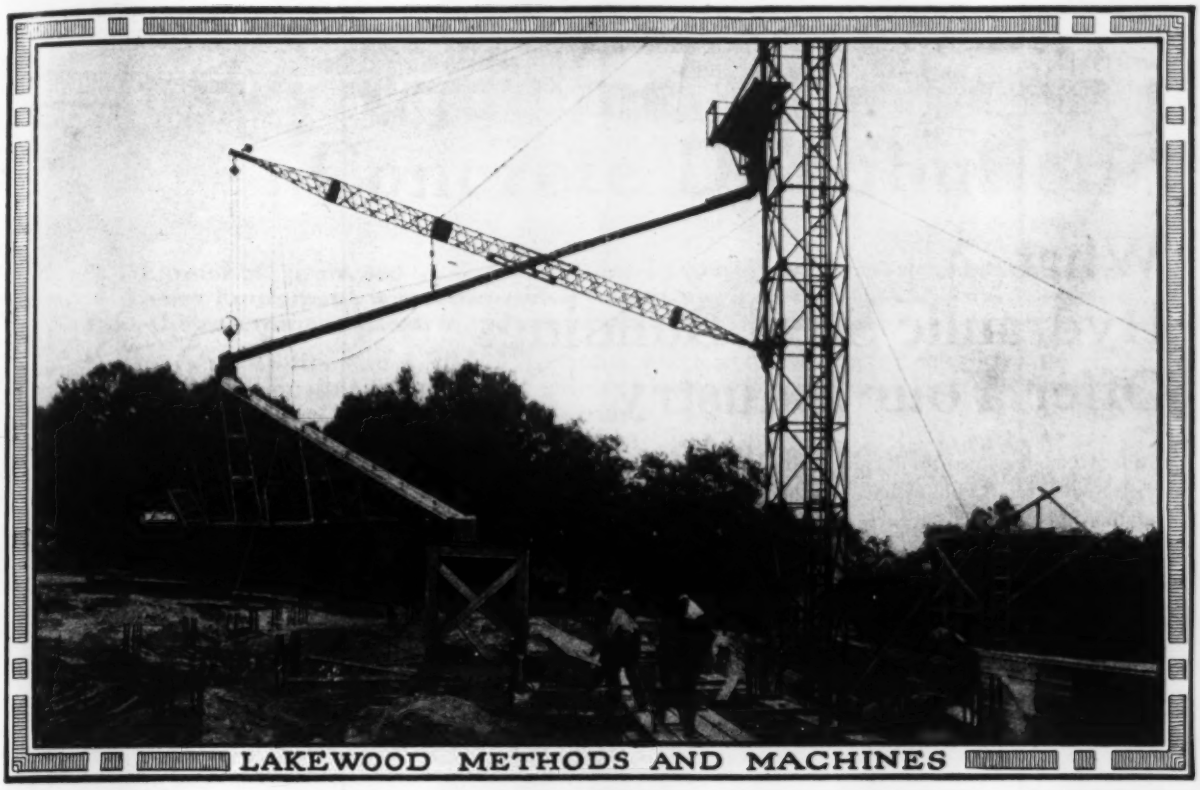
The gravel pit and crusher plant located east of Greenbush is regarded as a model of its kind. The plant is electrically operated and only three men are required in this connection. One of them operates the machinery and oversees the work, one is employed as belt tender, his duty being to keep the feed belt supplied with gravel and rock from the pit as it is hauled up to him by a huge electrically manipulated drag or shovel, and one who acts as a general utility man and machine wright

This plant has a capacity of 500 cubic yards daily, but so far has not been operating to that extent because that has not been necessary to supply the demand. Rock and gravel bins hold 100 cubic yards and these are kept filled at all times. The plant cost $20,000 and this year its output has graveled 18 miles of road.—*Oct. issue, Good Roads for Wis.*

SMITH ENGINEERING WORKS

3198 Locust St., Milwaukee, Wis.

Canadian Agents: **Canadian Ingersoll-Rand Co., Montreal, P. Q.**

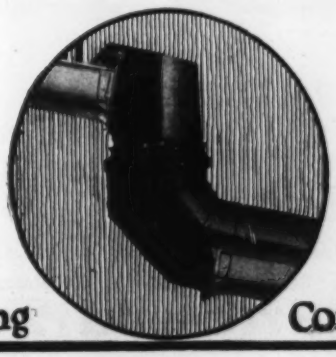


They're Speeding This Job With Lakewood Plant

The construction of the North Junior High School at Grand Rapids, Mich., is being pushed with all possible speed.

John C. McNabb & Sons chose a Lakewood Steel Tower and Lakewood Chutes to help them do the job. The Lakewood equipment includes a 150-ft. steel tower and counterweight plant.

Lakewood plant lends itself to economical operation and speedy construction. Have you the Lakewood bulletins?



The Lakewood Engineering Company, Cleveland U.S.A.

What Hydraulic Steel Buildings Offer Your Industry

Aside from the feature of low cost, long life, and resistance to fire, Hydraulic Steel Buildings have another feature of real importance in the building industry: *They can be quickly taken down, moved and re-erected or sold.*

Whether you need a good, substantial building for your client or a quickly erected, sturdy building for yourself to house tools, supplies and equipment, you'll realize distinct savings by sending to Hydraulic.

Phone, wire or write our nearest district office for details.

THE HYDRAULIC STEELCRAFT COMPANY
of THE HYDRAULIC STEEL COMPANY
CLEVELAND, OHIO

Branch Sales Offices:

New York	Chicago	Pittsburgh	Charleston, S. C.
St. Louis	Detroit	New Orleans	Charleston, W. Va.
Cincinnati	Memphis	Indianapolis	Lansing, Mich.
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A complete steel building; or the columns, trusses or purlins.

Salient Features of Hydraulic Steel Buildings

Quick Erection
Strength—All Steel
Permanency—
(rust-resisting "HY-COP" sheets)
Portability
Fireproof
Low Cost
Immediate Shipment
High Salvage Value

HYDRAULIC STEEL BUILDINGS

Standardized

Insley Equipment for Concrete Distribution

THE proof of promised performance lies in actual accomplishment and when Insley Equipment is recommended to perform a certain task there is assurance that the recommendations made are capable of fulfillment.

Engineering Ability and a Wide Experience serve as the basis for the developments which are responsible for the most efficient concrete placing equipment which it is possible to place in a contractor's hands.

At the time of figuring your next contract let us tell you what the INSLEY STEEL TOWER, QUICK SHIFT, COUNTERWEIGHT CHUTE PLANT will do for you on that particular job.

The illustration shows a 140 ft. Steel Tower, Quick Shift, Counterweight Chute Floating Plant installation as used by H. P. Converse & Co. in the construction of a bridge across the Connecticut River at Springfield, Mass.

The plant has a free radius of distribution of 150 ft. through an arc of 85 degrees and is so designed as to be adaptable for ordinary building work at the conclusion of this special job.

INSLEY MANUFACTURING CO.

Engineers and Manufacturers

INDIANAPOLIS

INSLEY

CONCRETE PLACING EQUIPMENT
INDUSTRIAL CARS — DUMP BUCKETS
STEEL DERRICKS

VULCAN

The Business Side of Locomotive Building

VULCAN Locomotives are not built or sold on the basis of price competition. They are built on a *performance* basis.

Only sound materials are used and we guard jealously the quality of workmanship which enters into the construction of VULCAN Locomotives.

It is not alone that we have been building locomotives for more than 45 years and wish to maintain the prestige we have earned, but also because we realize that economical transportation for you means an engine of correct design, plus a minimum of repair bills and maintenance charges.

These are the things you buy in a VULCAN Locomotive.

Your problems are our problems.

Correspondence Solicited

VULCAN IRON WORKS

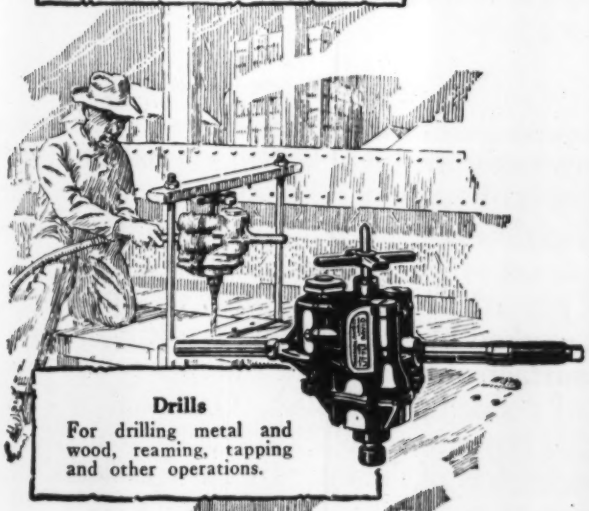
"Established 1849"

1737 Main Street, Wilkes-Barre, Pa.

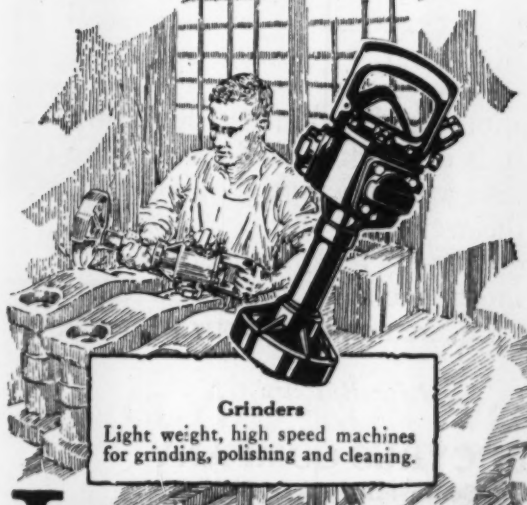
VULCAN

"Little David" Pneumatic Tools

Chipping Hammers
For chipping, calking, beading, sealing, etc. Made in six sizes.



Drills
For drilling metal and wood, reaming, tapping and other operations.



Grinders
Light weight, high speed machines for grinding, polishing and cleaning.

Riveting Hammers
For rivet driving, busting, etc. Six sizes, with open, closeed or inside trigger handles.

USE them for your repair, construction and assembly work—wherever you need portable, efficient power tools.

"Little David" Tools are distinguished by their simplicity, great ruggedness and ability to reduce costs.

Their simplicity means few working parts and few replacements. The tools are easy to handle, require little attention and stand up under long, hard use.

The complete line of air tools includes Riveting and Chipping Hammers, Reversible and Non-Reversible Air Drills and Reamers, Close Quarter Drills, Portable Grinders, Saws, Holders-on, Air Motor Hoists and Stationary Motors, Woodborers and Wire Brush Cleaners.

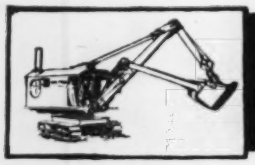
Ask for Catalog 8000 describing this complete line of modern pneumatic tools

Ingersoll-Rand Company
General Offices: Broadway, New York

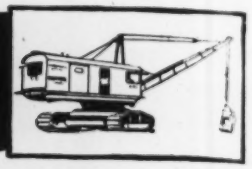
Offices Everywhere

223-PT

Ingersoll-Rand



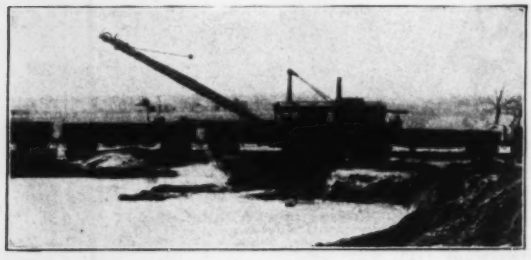
BUCYRUS



Bucyrus dragline stripping a limestone quarry. Cut 10 to 25 feet deep, 100 feet wide, consisting of heavy loam, red clay with flinty boulders and a bottom of solid limestone which was handled after blasting.

Bucyrus electric dragline digging a 25 foot cut on a U. S. Reclamation Project. Note the neatness of the slopes.

Excavating for foundations of a lock entrance wall on a ship canal. The trench is 158 feet wide on the top with a maximum depth of 65 feet, all handled in one cut. The Bucyrus dragline averaged 200 12-yd. cars in ten hours on this job.



Bucyrus dragline digging gravel under 15 feet of water. As high as 1500 cu. yds. have been loaded into cars in 10 hours. The operating expense of the dragline does not equal the pumping costs when the gravel was dug by a shovel in the pit.

What will a dragline do?

The great operating range and unusual flexibility of Bucyrus Draglines adapt them to many types of work. Although the commonest use for dragline excavators is on canal and irrigation ditch excavation, there are many other kinds of work on which a dragline may be used to advantage.

Bucyrus draglines will construct levees as compact and watertight as those built by any other method. Railroad fills can also be built without rehandling, by borrowing the necessary material and dumping direct on the fill. Sand, gravel and clay pits are being successfully stripped and worked by draglines working from the surface of the ground and independent of flooded pit troubles. On canal or ditch excavation the wide reach means fewer moves of the machine, and makes it easy to overcast material far enough from the excavation to eliminate all danger of caving.

These photographs show some of the many kinds of work on which Bucyrus Draglines are operating efficiently. Under the wear and tear of the hardest digging, Bucyrus draglines will stay on the job and move the dirt. Let us figure on your requirements for your next job.

Send for Bulletin GN

BUCYRUS COMPANY

South Milwaukee, Wis.

New York
Birmingham
Portland, Ore.
Minneapolis
Denver
Chicago
Salt Lake City
San Francisco
London, England

391

Reserve Power

The Clyde Hoist was built originally for logging operations wnere the unexpected overload is the rule and not the exception.

Reserve power, which at all times gives to the operator a sense of security and satisfaction, becomes a vital necessity in handling logs from stump to mill.

And it is not enough to meet these frequent emergencies.

The location of such operations is usually miles from the source of supply of replacement parts in case of accident. The engine that gives uninterrupted service under adverse conditions must necessarily be built with the utmost care, not only in the selection of materials, but in the quality of workmanship employed.

The Clyde Hoist will *more* than stand the test. It has proven itself in practically every logging district in the world.

There is a repeat order built into every hoist of Clyde make.

ALLIED — Export Department — ALLIED CONSTRUCTION MACHINERY CORPORATION — 120 Broadway, New York, U.S.A. — ALLIED

CLYDE IRON WORKS SALES COMPANY

DULUTH, MINN., U. S. A.

Sole Distributors for Clyde Iron Works

Branch Offices and Warehouses:

NEW YORK	NEW ORLEANS	SEATTLE	CHICAGO	JACKSONVILLE	PORTLAND
141-149 Centre St.	309 Magazine St.	542 First Ave. So.	11 So. LaSalle St.	507 Hill Bldg.	18th and Upshur Sts.

Lackawanna Steel Sheet Piling

again proves its value to the contractor

THE foundations of the Webster Street Bridge at Tonawanda, N. Y., which spans the New York State Barge Canal at this point, were constructed in cofferdams of Lackawanna 14″ x 3/8″ Arched-Web Steel Sheet Piling by Lathrop, Shea & Henwood Company, Contractors. The above picture shows the cofferdam for the center pier, just previous to placing the concrete, while in the background one of the completed dish abutments is seen.

The method of installing the bracing system for the pier was especially interesting. The two top tiers were constructed in crib form on skids, as shown in lower picture, then launched and floated to position. The Steel Sheet Piling was then assembled vertically around this timber cage and driven.

Although the steel sheet piles had been used in other installations they performed their work well as the appearance of the job indicates.

Lackawanna engineers have data on a great many interesting foundation problems. Their advice is free and is cheerfully given.

Lackawanna Steel Company

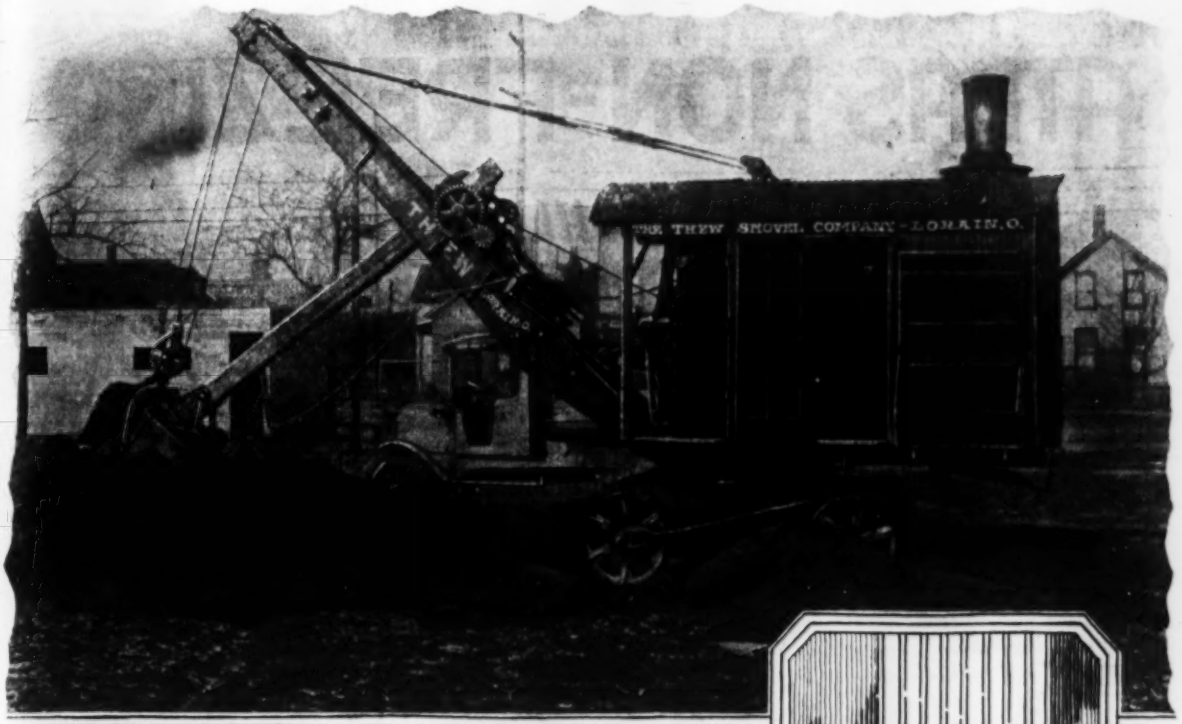
General Sales Offices and Works: Lackawanna, N. Y.

BUFFALO BOSTON CHICAGO CINCINNATI CLEVELAND DETROIT NEW YORK PHILADELPHIA ST. LOUIS SAN FRANCISCO

Licensees for the manufacture of Lackawanna Steel Sheet Piling:

For Great Britain and British Colonies in the Eastern Hemisphere, Cargo-Fleet-Iron Co., Ltd., Middlesbrough, England. For France, Italy, Spain, French Colonies and Protectorates, Italian Colonies and Spanish Colonies in the Eastern Hemisphere, Cie des Forges & Acieries de la Marine et d'Homecourt, Paris, France.

Sole Exporter for Other Countries: CONSOLIDATED STEEL CORPORATION, 25 Broadway, New York



Profits

HERE'S a type O Thew steadily plugging along through frozen earth.

Which goes to show that the Thew keeps right on working, making profits for its owner, in any season. Extra jobs like this keep down the overhead in off months, but it takes a real shovel to stand the pace.

One more reason why you should own a Thew. Write for information.

THE THEW SHOVEL COMPANY
LORAIN, OHIO

Thew
Power Shovels

ATLAS NON-FREEZING

will not freeze—eliminates thawing and headaches

In the most exhaustive tests in both laboratory and field, this new explosive—Atlas Non-Freezing—has withstood the lowest temperatures known to man. It has been used for all explosive requirements and its efficiency has been fully proved in quarries, pits and mines; in rock, earth and ore—all at temperatures varying from that of torrid to the coldest found in the land of perpetual snows.

Atlas Non-Freezing has the same stability and uniformity that characterize other Atlas high explosives. It will not explode prematurely. No objectionable fumes are given off on detonation. Its use eliminates the headaches that attend the handling of ordinary explosives.

Atlas Non-Freezing is made in five grades, thus covering all blasting requirements.

Tell us what explosive you are using now and we will tell you what grade of Atlas Non-Freezing will do the work and save you the inconvenience which attends the use of explosives that are not immune from the effects of cold.

ATLAS POWDER COMPANY
Wilmington, Delaware

Branch Offices:—Allentown, Pa.; Birmingham, Ala.; Boston; Chicago; Des Moines, Ia.; Houghton, Mich.; Joplin, Mo.; Kansas City; Knoxville; McAlester, Okla.; Memphis; New Orleans; New York; Philadelphia; Pittsburg, Kan.; Pittsburgh, Pa.; Pottsville, Pa.; St. Louis; Wilkes-Barre.

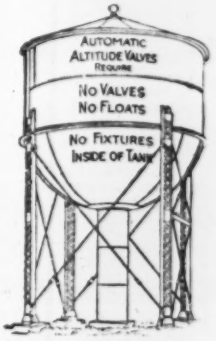
NO thawing — NO headaches — NO objectionable fumes

"We have cut out water waste and we have cut out floats and fixtures!"

with

GOLDEN-ANDERSON

Patent Automatic Cushioned Controlling Altitude Valves



"THERE is no reason for allowing the preventable waste of water going on down the overflows of your reservoirs, standpipes and tanks at a time when the greatest conservation of the nation's resources are imperative.

"I am ready to take up your case in detail and to point out how easily you can overcome this trouble by equipping the supply lines with these valves."

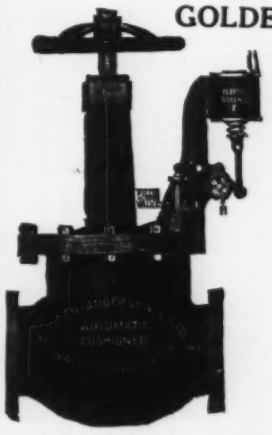
1—They keep the water level constant in reservoirs, standpipes, tanks, etc., under all conditions.
2—Very simple in design. Contain no floats or fixtures inside or outside of tanks.
3—A perfect cushion by water and air absolutely prevents water hammer surges and broken mains. No metal-to-metal seats.
4—Can be closed in three ways, by hand or automatically by water if a pipe breaks and by electricity from distant points.
5—When desired, can be connected to work "both ways" on a single pipe line.

"Made with Stop-Starter Attachment for Centrifugal Pumps."

Hosts of References

Made with Stop-Starter Attachment for Centrifugal Pumps

GOLDEN-ANDERSON Pat. Cushioned-Water Service Valve "For Fire Service"



1—Can be opened and closed instantly from distant points by electricity.
2—Current is on only a few seconds, thereby preventing waste.
3—Can be fitted with either d.c., or a.c. solenoid.
4—Perfectly cushioned by water and air. Positively no metal to-metal seating.
5—Can be closed by hand.

Sizes to 30 in.

GOLDEN-ANDERSON

Pat. Automatic-Cushioned Water Pressure Reducing Valves

1—Maintain a constant terminal water pressure under all conditions.
2—Positively cushioned by water and air in opening and closing.
3—Valve closes slowly, eliminating all shock and water hammer.
4—Can be furnished with electric feature to open valve to full area from distant points. Sizes to 30 in.

GOLDEN-ANDERSON

Automatic Double Cushioned Check Valve

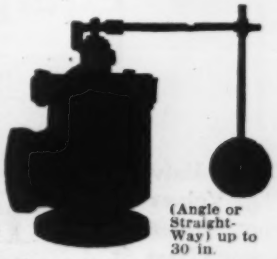
Automatically prevents disastrous reverse flow of pressure.

Especially adapted for use in discharge line of pump.

No water hammer or shock on reverse flow of pressure cushioned in opening and closing.

Angle and Globe Patterns
Sizes 3 in. to 30 in.

Golden-Anderson Pat. Automatic Float Valves



1. Accurately control the water in open tanks, hot wells, reservoirs, etc., between two fixed limits.
2. Cushioned by both water and air. No metal-to-metal seating, pounding, sticking or chattering.
3. Can be regulated to operate quickly or slowly on High or Low pressures. Float swivels to any angle desired.
4. Construction, Heavy Iron Body Bronze Mounted. Virtually indestructible, due to service.

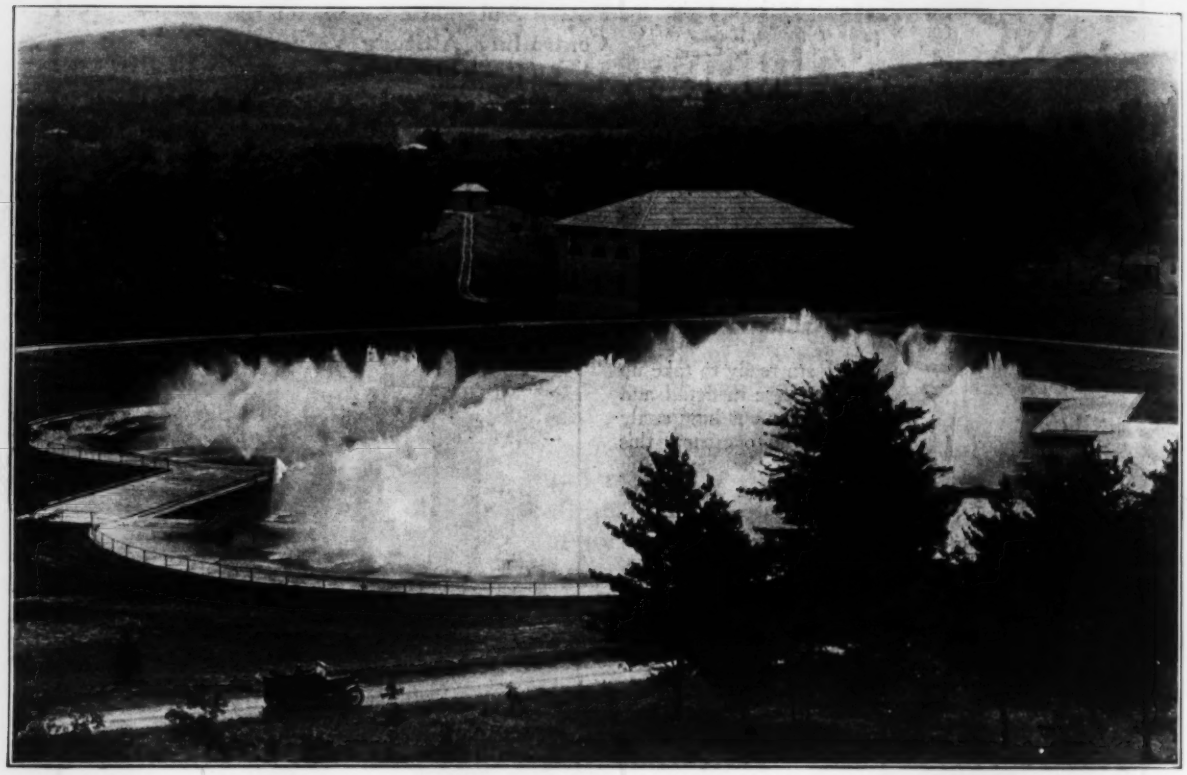
(Angle or Straight-Way) up to 30 in.

Golden-Anderson Valve Specialty Company

1202 Fulton Building, Pittsburgh, Pa.

COFFIN VALVE COMPANY

Makers of the Largest Sluice and Gate Valves in America



Out of 14 contracts for Valves for the Catskill Aqueduct we have been awarded six. This means more than $500,000 worth of equipment for the water supply of New York City

Check Valves
Flap Valves
Foot Valves
Sewer Gates

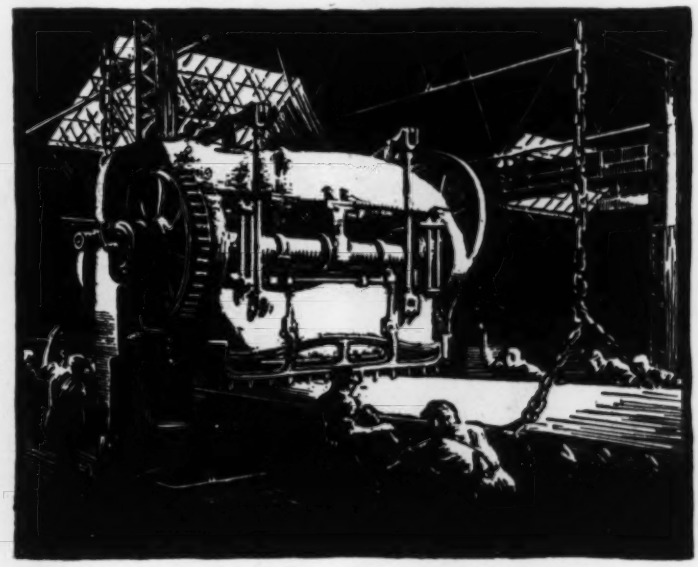
Office and Works: Neponset, Suburb of

BOSTON, MASS.

Sluice Gates
Gate Valves
Butterfly Valves
Fire Hydrants

REPRESENTATIVES:

New York City C. W. Bergen & Co., 256 Broadway. Philadelphia, Pa.: DeHuff & Hopkins, Morris Building.
Cleveland, Ohio: Tomlinson Steam Specialty Co., 1597 St. Clair Ave. San Francisco, Cal.: Theo F. Dredge, Monadnock Building.
Chicago, Ill.: Whitney & Ford, 4325 Cottage Grove Ave.
Toronto, Ont.: The Arthur S Leitch Co., Ltd., 1001 Kent Building.



Equipped to Serve

THE Plate shear shown in the illustration will cut plates up to 60 inches wide by $1\frac{1}{2}$ inches thick at one stroke. Ryerson saws cut the largest beams in seconds.

These machines are typical of the modern equipment in use in every department; in fact, nothing is overlooked that will make for quick service.

If you want steel in a hurry, depend upon Ryerson Steel-Service.

Write for Ryerson Stock List —the key to Immediate Steel

ESTABLISHED 1842 INCORPORATED 1888

JOSEPH T. RYERSON & SON

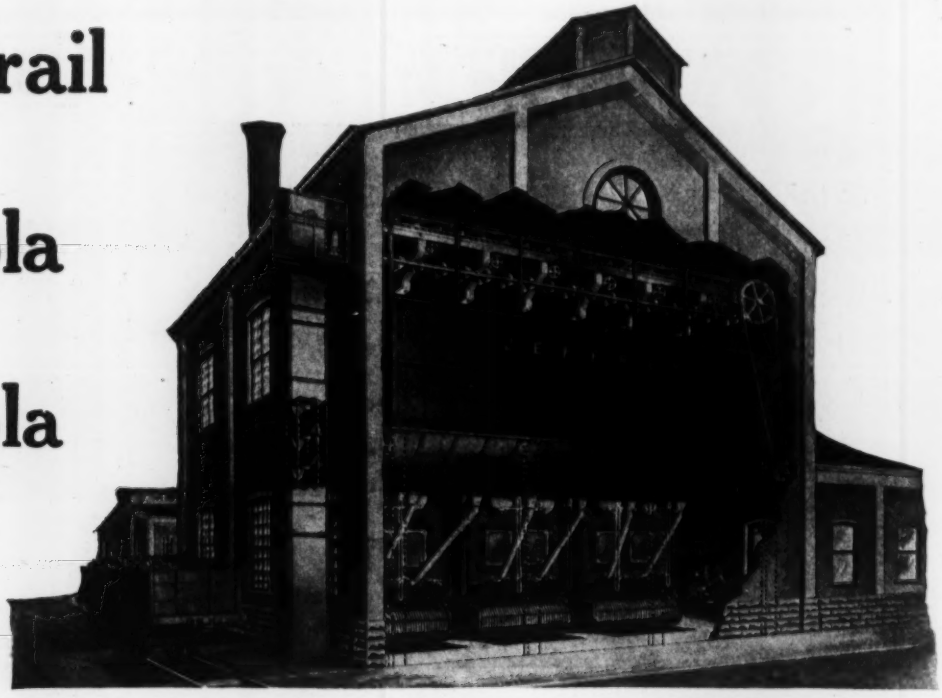
CHICAGO ST. LOUIS DETROIT BUFFALO NEW YORK

BRANCH OFFICES DENVER HOUSTON JERSEY CITY
MILWAUKEE MINNEAPOLIS NEWARK SAN FRANCISCO

RYERSON STEEL-SERVICE

29-E

The Trail from Gondola to Gondola



At this plant coal is handled by Jeffrey Track Hopper, Single Roll Crusher and V-Bucket Elevator Conveyer to Bunkers. Ashes are handled to Skip Hoist.

In Large or Small Power Plants

JEFFREY EQUIPMENT

will automatically and economically handle coal and ashes.

It is so standardized and built in various types and sizes that every plant can be accommodated. The coal passes from hopper to crusher, to conveyer and bunkers, and ashes pass from pit to conveyer or skip hoist to bin or railroad car.

Tell our Eng neering Dept. about your local conditions, and they will gladly suggest efficient equipment and assist you in the solution of your coal and ashes handling problems.

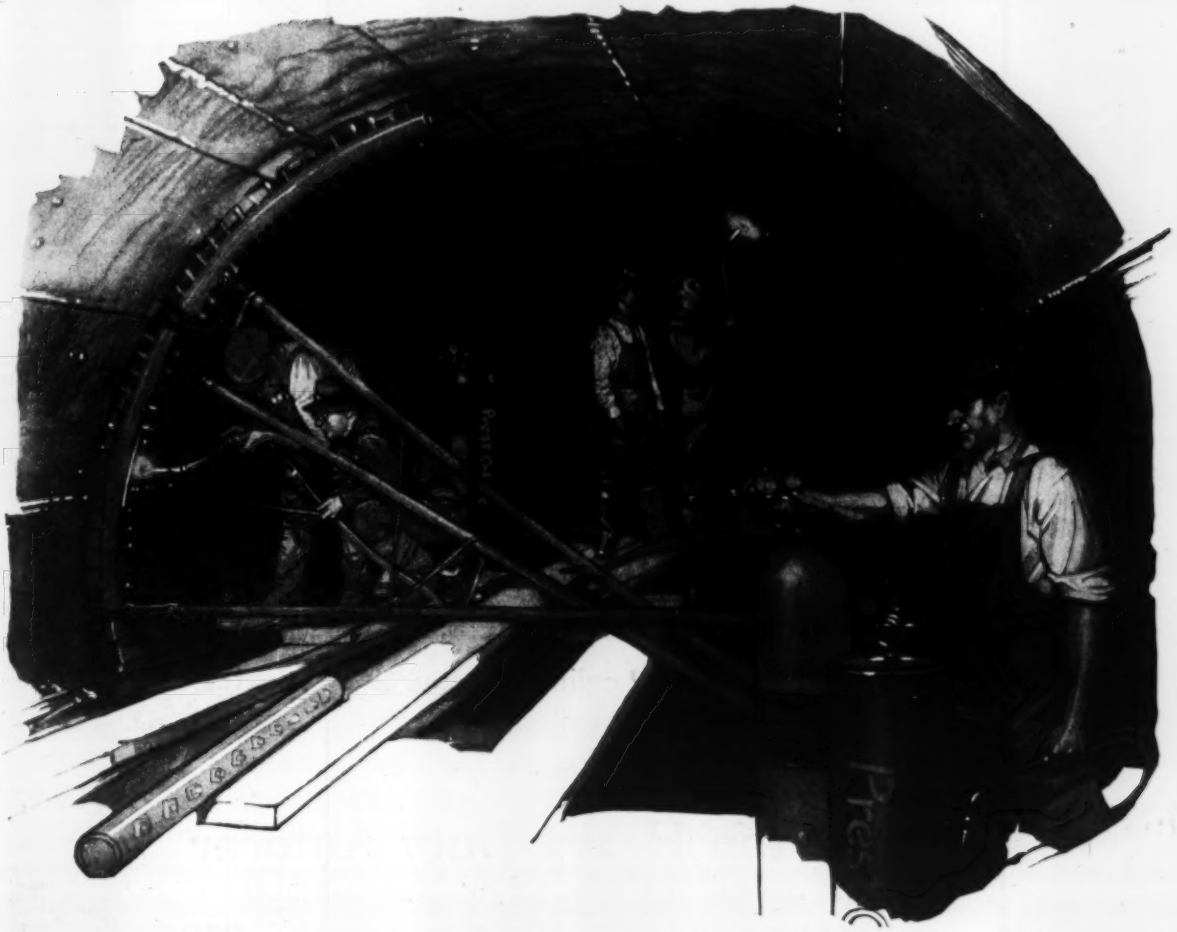
Jeffrey Coal and Ashes Handling Equipment includes Track Hoppers; Crushers; Elevators; Conveyers; Weigh Hoppers; Skip Hoists; Portable Bucket Loaders; Portable Car Unloaders for handling coal from hopper bottom cars, etc.

V-Bucket Conveyer especially adapted for handling slack and stoker sized coal.

Pivoted Bucket Carrier for handling both coal and ashes in in large sized power plants.

The Jeffrey Mfg. Co., Columbus, Ohio

New York	Pittsburgh	St. Louis	Dallas
Boston	Cleveland	Detroit	Milwaukee
Philadelphia	Charleston, W. Va.	Birmingham	Denver
Scranton	Chicago	Middlesboro, Ky.	Los Angeles
Buffalo			Montreal



Two miles of seamless copper tube a hundred feet underground!

The job illustrated—that of lining two miles of the Catskill Aqueduct with copper—shows in a compelling manner the extreme portability of

Prest-O-Lite

DISSOLVED ACETYLENE

Without gas—ideal for both welding and cutting – in such conveniently transportable containers — the oxy-acetylene process would lose much of its usefulness.

Whether the work be at the top of a sky-scraper or deep under the surface, indoors or out — Prest-O-Lite goes to the job!

A nation-wide service built around forty plants and warehouses insures a constant and prompt supply of Prest-O-Lite.

THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York

Balfour Building San Francisco

In Canada: Prest-O-Lite Co. of Canada, Limited, Toronto

PW-884-31

We are ready
1922
New Models—New Prices
Effective January 3d

Standard 1½–2 ton Autocar

Overall capacity, 11,000 lbs. (Chassis, body and load)

Type F, 97-in. wheelbase, 2 cylinder motor $1950
Type G, 120-in. wheelbase, 2 cylinder motor . . . $2050

Unladen Chassis weight: Type F, 3600 lbs.; Type G, 3700 lbs.

New 2 ton Heavy Duty Autocar

Overall capacity, 14,000 lbs. (Chassis, body and load)

Type H, 114-in. wheelbase, 4 cylinder motor . . . $2950
Type K, 138-in. wheelbase, 4 cylinder motor . . . $3075

Unladen Chassis weight: Type H, 5200 lbs.; Type K, 5350 lbs.

New 5 ton Heavy Duty Autocar

Overall capacity, 22,000 lbs. (Chassis, body and load)

Type Y, 120-in. wheelbase, 4 cylinder motor . . . $3950
Type B, 156-in. wheelbase, 4 cylinder motor . . . $4100

Unladen Chassis weight: Type Y, 7200 lbs.; Type B, 7400 lbs.

THE AUTOCAR COMPANY, Ardmore, Pa., Established 1897

Autocar

Wherever there's a road

OFFICIAL PROPOSALS

Bids: Jan 4

Barge Canal Terminals

Albany, N. Y.

NOTICE TO CONTRACTORS: Sealed proposals will be received by the undersigned at his office in the Capitol at Albany, N. Y., until twelve o'clock noon of Wednesday, January 4th, 1922, at which place and hour they will be publicly opened and read, for the construction of barge canal terminals pursuant to the provisions of Chapter 746 of the Laws of 1911, and amendatory laws, and Chapter 176 of the Laws of 1921, as follows:

TERMINAL CONTRACT NO. 120

For furnishing, instaling and testing two two-ton, electric, overhead, wharf cranes at Rochester.

Contract plans, sheet 1.

Plans may be seen and detailed specifications, engineer's estimates of quantities, proposal blanks, forms of contracts and bonds required and other information for proposers may be had at the office of the Superintendent of Public Works at Albany, N. Y., the office of the Assistant Superintendent of Public Works for the Middle Division at Syracuse, N. Y., at the office of the Assistant Superintendent of Public Works for the Western Division at Rochester, N. Y., at the office of the Superintendent of Public Works, Erie Basin Terminal, Buffalo, N. Y., and Terminal Warehouse, Pier 6, East River, New York City.

Copies of detailed plans or drawing may be obtained from the State Engineer and Surveyor at Albany, N. Y., upon payment to him of the cost of producing them.

Monthly estimates will be paid of ninety per centum (90 per cent) of the work done at the contract price. Every proposal for said work must be accompanied by a money deposit in the form of a draft or certified check upon some good banking institution in the city of Albany, or New York, issued by a national or state bank or trust company in good credit within the state and payable at sight to the Superintendent of Public Works for five per centum (5 per cent) of the amount of the proposal.

The person whose proposal shall be accepted will be required to execute a contract and furnish bonds within ten days from the date of notice of award delivered to him or them in person or mailed to the address given in the proposal.

Upon execution of the contract and approval of bonds, the certified check or draft will be returned to the proposer unless the same shall have been presented for collection prior to such time in which case the amount of the deposit will be refunded by the Superintendent of Public Works.

The deposits of bidders other than the one to whom the award of contract shall be made will be returned immediately after the award has been made.

The bond required for the faithful performance of the contract shall be in such sum as shall be fixed by the Superintendent of Public Works, which sum shall not be less than twenty per centum (20 per cent) of the estimated cost of the work, according to the contract price, and an additional bond, known as the labor bond, in the sum of ten per centum (10 per cent) of the amount of the estimated cost of the work according to the contract price, will be required as security that the contractor will pay in full at least once in each month all laborers employed by him upon the work specified to be done in the contract.

In the event that more than one surety company is offered as surety on said bonds co-insurance only will be accepted.

Each proposal must be addressed to the Superintendent of Public Works, Albany, N. Y., and must be endorsed on the envelope with the name of the construction for which the proposal is made.

Award, if made, will be made to the person or persons whose proposal shall be lowest in cost to the state for doing the work, and which shall comply with all provisions required to render it formal. Before any award shall be made the lowest bidder will be required to satisfy the Superintenent of Public Works of his ability to provide suitable equipment and materials for the proper performance of the work.

The right is reserved to reject all proposals and readvertise and award the contract in the regular manner if, in the judgment of the undersigned, the interests of the state will be enhanced thereby.

CHARLES L. CADLE,
Superintendent of Public Works.

OFFICIAL PROPOSALS

Bids: Jan. 11.

Artesian Well

Central Islip, N. Y.

NOTICE TO CONTRACTORS: Sealed proposals for artesian well for additional water supply at South Colony Power Plant, Central Islip State Hospital, Central Islip, N. Y., will be received by the State Hospital Commission, Capitol, Albany, N. Y., until 3 o'clock p.m. on Wednesday, January 11, 1922, when they will be publicly opened and read. Proposals shall be enclosed in an envelope furnished by the State Architect, sealed and addressed, and shall be accompanied by a certified check in the sum of five per cent (5%) of the amount of the proposal. The contractor to whom the award is made will be required to furnish surety company bond in the sum of fifty per cent (50%) of the amount of contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specification No. 3523. The right is reserved to reject any or all bids. Drawings and specifications may be examined and inspected at the Central Islip State Hospital, Central Islip, N. Y., at the New York Office of the Department of Architecture, Room 618, Hall of Records Building, and at the Department of Architecture, Capitol, Albany, N. Y. Drawings, specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y., upon reasonable notice to and in the discretion of the State Architect, L. F. Pilcher, Capitol, Albany, N. Y.

L. M. FARRINGTON,
Secretary, State Hospital Commission.
Dated: Dec. 10, 1921.

Bids: Jan. 13.

PUBLIC SALE
By order of the Harbor Commissioners

For a Lease of Pier

Walnut Street Pier, Camden, N. J., For a term of one, three or five years from January 15, 1922,
ON FRIDAY, JANUARY 13, 1922, at 8 P.M.
Room 11, City Hall, Camden, N. J.
Bids will be received for said lease.

Bidders to state term bid on, also annual rental to be paid. Commission may require lessee to give bond with satisfactory surety for faithful performance of lease. It reserves the right to reject any or all bids as may be best for City's interests.

A certified check for $100.00 to order of City of Camden is to accompany each bid, check to be returned on execution of lease or rejection of bid. Copies of lease mailed on application and other information as to equipment can be had from Mr. William D. Sayrs, Jr., Harbor Engineer, Room 11, City Hall, Camden, N. J.

Address proposals to Mr. George W. Bradley, Chairman of Board of Harbor Commissioners Room 11, City Hall, Camden, N. J.

Dated December 10th, 1921.

Bids: Jan. 10.

Highway Work

Albany, N. Y.

Sealed proposals will be received by the undersigned at their office, No. 55 Lancaster Street, Albany, N. Y., at one o'clock P.M., on TUESDAY, the 10th day of JANUARY, 1922, for the improvement of highways in the following counties:

Albany, one highway, 5.89.
Allegany, one highway, 5.01.
Dutchess, one highway, 1.33.
Franklin, one highway, 7.50.
Genesee, one highway, 2.10.
Orange, one highway, 2.75.
Orleans, one highway, 2.25.
Schoharie, two highways, 3.94 and 10.33.
Sullivan, one highway, 5.69.

Maps, plans, specifications and estimates may be seen and proposal forms obtained at the office of the Commission in Albany, N. Y., and also at the office of the division engineers in whose division the roads are to be improved. The addresses of the division engineers and the counties in which they are in charge will be furnished upon request.

The especial attention of bidders is called to "General Information for Bidders" in the itemized proposal, specifications and contract agreement.

HERBERT S. SISSON,
Commissioner.
J. C. FINCH,
Secretary.

OFFICIAL PROFOSALS

Bids: Jan. 17. (Date extended.)

Garbage Incinerator

New Orleans, La.

Sealed proposals will be received at this office until the hour of 11 o'clock a.m., Wednesday, January 4th, 1922, for furnishing labor, materials and equipment, and constructing in accordance with the plans and specifications on file in the office of the City Engineer, any or all of the following pieces of work:

(1) Foundations and building complete, including piling.

(2) Radial brick chimney 150 feet by 6 feet complete on foundation furnished.

(3) Furnishing and installing of Incinerator equipment of the Decarie type, including electric travelling crane and electric generating equipment complete.

A certified check for an amount equal to 10% of the total amount bid in the proposal, payable to the undersigned Commissioner of Public Finances, or a bidder's bond for the same amount, must accompany each proposal.

Bond required: Equal to the total amount of contract.

The City Engineer will furnish bidders with a blank form of proposal. No proposal will be considered unless submitted on such form, and the bid price shall be expressed in both writing and figures, and enclosed in a sealed envelope marked "Proposal for Incinerator" addressed to the Commissioner of Public Finances of the City of New Orleans.

Bidders must have paid their City License in order that their bids may be accepted.

The successful bidder must enter into contract at his expense before the City Notary.

Copies of the plans and specifications now on file, as well as proposal blank forms, may be had at the office of the City Engineer upon the deposit of $50.00, which amount will be refunded if the plans and specifications are returned in good condition within ten (10) days after the opening of bids.

The City reserves the right to reject any and all bids.

R. M. MURPHY,
Commissioner of Public Finances.
City Hall, New Orleans, La.

Bids: Jan. 9.

Paving

Elmhurst, Ill.

The City of Elmhurst, Illinois, will open bids on January 9, 1922, for the construction of Bituminous Macadam Pavement with concrete curb and gutter, necessary grading and sewer work.

The estimated cost of the work is $115,000, and the quantities approximately as follows:

21,000 lineal feet of concrete curb and gutter.
55 catch basins adjusted.
12 new brick catch basins.
35 manholes adjusted.
6,000 square feet of concrete sidewalk.
16,000 cubic yards of grading.
25,000 square yards of bituminous macadam pavement.

Plans, specifications and bidding blanks can be obtained at the office of the Engineer.

EDWIN HANCOCK,
Engineer.
2047 Ogden Ave., Chicago, Illinois.

Bids: Jan. 3.

Portland Cement

Richmond, Va.

Sealed proposals will be received at this office until 12 o'clock Noon, January 3, 1922, for the furnishing and of prompt delivery to any part of the City—40,000 barrels of Portland Cement; to be let in two separate items as follows:

20,000 barrels for sewers.
20,000 barrels for paving.

Contract terminating January 1, 1923.

Forms of proposals can be obtained on application.

A certified check for amount stated ($1,000.00) on proposals must accompany each bid as a guaranty of execution of contract. The Director of Public Works reserves the right to reject any and all bids.

ALLEN J. SAVILLE,
Director of Public Works.

OFFICIAL PROPOSALS

Bids: Feb. 7.

Hudson River Vehicular Tunnel

—CONTRACTS NOS. 3 AND 4—NEW YORK STATE BRIDGE AND TUNNEL COMMISSION AND NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION.

New York, N. Y.

As set forth in the invitation to Contractors, sealed proposals for the construction of the Vehicular Tunnel under the Hudson River from Canal Street, New York City, to 12th Street, Jersey City, will be received at the offices of the New York State Bridge and Tunnel Commission and the New Jersey Interstate Bridge and Tunnel Commission, Room 617, Hall of Records, Borough of Manhattan, New York City, until the seventh day of February, 1922, at 3:00 o'clock p.m., Eastern Standard Time, at which time or at a later date the proposals will be publicly opened.

Contract No. 3 is for the construction of two cast-iron tunnels between the Canal Street and Spring Street shafts, New York City, and a point about six hundred (600) feet west of the New York pierhead line, and sinking a shaft caisson near the New York pierhead line.

Contract No. 4 is for the construction of two cast-iron tunnels between a point one thousand (1,000) feet west of the river bulkhead near the line of 12th Street, Jersey City, and a point about six hundred (600) feet west of the New York pierhead line, and sinking four caissons—two inside the bulkhead line and two near the pierhead line.

Proposals must be in the form and on the blanks prescribed by the Commissions and must be accompanied in the case of Contract No. 3 by two certified checks for One Hundred Twenty-Five Thousand Dollars ($125,000) each and two consent bonds for One Million Dollars ($1,000,000) each, and in the case of Contract No. 4 by two certified checks for One Hundred Fifty Thousand Dollars ($150,000) each and two consent bonds for One Million Dollars ($1,000,000) each.

The tunnels will be driven under compressed air by the shield method, and the shafts are to be sunk as caissons under compressed air. The contract time is thirty-six (36) months.

Attention is called to the form prescribed by the Commissions for bidders on the two contracts in that they are invited to bid under either or both of two forms in each contract. In Form "A," the bidder is to state his price for the work proposed without dependence upon the award of the other contract. In Form "B," the bidder is to state his price for the work proposed in case he should also be awarded the other contract. The proposal in Form "B," in order to be valid, must be made in the proposals for both contracts.

Plans, form of proposal, contract and specifications may be obtained by prospective bidders from C. M. Holland, Chief Engineer, Room 614, Hall of Records, New York City. A payment of Five Dollars ($5.00) for each contract will be required.

The Commissions reserve the right to reject any and all bids.

T. ALBEUS ADAMS,
Chairman, New Jersey Interstate Bridge and Tunnel Commission.

GEORGE R. DYER,
Chairman, New York State Bridge and Tunnel Commission.

Arms Limitation—
Less Taxation—
Less Destruction—
More Construction—
You'll get your share—
More CONTRACT BONDS.
SWART SERVICE
REALLY SERVES
Harmon V. Swart
99 William St., New York

OFFICIAL PROPOSALS

Bids: Jan. 16.

Reinforced Concrete Bridge

Norristown, Pa.

Sealed proposals will be received by the Controller of Montgomery County, at the Court House, Norristown, Pa., up until 11 o'clock a.m., January 16, 1922, at which time they will be publicly opened, for the furnishing of all materials, labor, tools and machinery necessary for the building of a three-span reinforced concrete bridge, over the Schuylkill River between Royersford and Spring City in Montgomery and Chester Counties, Pa., in accordance with plans and specifications now on file at the office of the Clerk of the County Commissioners of Montgomery and Chester Counties.

Prospective bidders may obtain plans and specifications by depositing $10.00 with the Clerk of the County Commisioners at Norristown, Pa.

Each bidder must use the form of proposal attached to and forming a part of the specifications.

A certified check for $5,000.00 must be deposited with the Clerk of the County Commissioners of Montgomery County, one hour before the time set for the opening of the bids, as a guarantee of good faith and to protect the counties from any loss by failure to comply with the terms of the proposal.

The right is reserved to reject any or all bids.

HORACE W. SMEDLEY,
Controller
of Montgomery County.
GEORGE S. DEWEES,
Controller
of Chester County.

Bids: Jan. 3.

Highway Work

Gastonia, N. C.

The Gaston County Commissioners will receive bids up to Tuesday, Jan. 3rd, for the construction of 8 miles of hard surface highway consisting of 56,000 square yards of pavement. This work will consist of reconstructing an old macadam road and the construction of a wearing surface of either the three types. Asphaltic Concrete (Topeka Mix), Asphaltic Macadam (Penetration) or binder course 1-1½. Each bid must be accompanied with a certified check equal to 5% of amount bid, sealed and addressed to County Commissioners, Gaston County and marked Proposal to construct Dallas Road. Surety Bond to the amount of 50% of the contract will be required. Plans and Specification may be obtained from the Highway Engineer, Gaston County, Gastonia, N. C., upon payment of $2.50.

D. L. STRUTHERS,
Highway Engineer.

U. S. GOVERNMENT

PROPOSALS FOR COMPLETION POWER PLANT.—Office of Constructing Quartermaster, Frankford Arsenal, Philadelphia, Pa.—Sealed proposals will be received here until 2 p.m., February 8, 1922, and then opened, for the Completion of Power Plant, including installation of equipment. Plans and specifications will be furnished upon receipt of a deposit of Ten Dollars ($10.00).

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., Dec. 21, 1921.—Sealed proposals will be opened in this office at 3 p.m., Jan. 18, 1922, for construction (except mechanical equipment) of seven buildings, for the United States Public Health Service Hospital, at Augusta, Ga. Drawings and specifications may be obtained at this office in the discretion of the Supervising Architect. JAS. A. WETMORE, Acting Supervising Architect.

U. S. GOVERNMENT

U. S. ENGINEER OFFICE, MOBILE, ALA., Dec. 12, 1921. Sealed proposals will be received here until 11 o'clock A. M., January 20, 1922, and then opened for dredge pontoon catamarans with discharge pipe for the U. S. 20-inch hydraulic dredge Wahalak. Further information on application.

U. S. ENGINEER OFFICE, JACKSONVILLE, FLA.—Sealed proposals will be received here until 12 M., Jan. 12, 1922, and then opened for dredging and rock removal in Sarasota Bay, Fla. Information on application.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., December 15, 1921. SEALED PROPOSALS will be opened in this office at 3 p. m., January 12, 1922, for new hot water piping, etc., in the United States Mint, Philadelphia, Pa., in accordance with specification and drawing, copies of which may be had at this office or at the office of the Custodian, Philadelphia, Pa., in the discretion of the Supervising Architect, Jas. A. Wetmore, Acting Supervising Architect.

U. S. ENGINEER OFFICE, 815 Witherspoon Bldg., Philadelphia, Pa. Bids are wanted until January 19, 1922, for dredging in Delaware River in front of Camden, N. J. Further information on application

SEALED PROPOSALS, indorsed "Proposals for Post Exchange and Dispensary, San Diego, Calif., Special No. 4527," will be received at the Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 o'clock a.m. Jan. 18, 1922, and then and there publicly opened, for post exchange and dispensary buildings, which will be supported by concrete piles furnished in place by the Government and will have reinforced concrete frames and reinforced concrete and tile floors; composition and tile flooring; tile and asphalt and gravel roofing; plastered, hollow-tile walls and partitions; plastered steel-stud partitions; wood doors and sash; and complete heating, plumbing and lighting systems, all at the Naval Base (Marine Corps Base), San Diego, Calif. Drawings and Specification No. 4527 may be obtained on application to the Bureau or to the Commandant, Eleventh Naval District, Naval Base, San Diego, Calif. Deposit of a check or postal money order for $30, payable to the Chief of the Bureau of Yards and Docks, is required as security for the safe return of the drawings and specification. C. W. Parks, Chief of Bureau, November 30, 1921.

Many contractors depend entirely upon the
OFFICIAL PROPOSAL COLUMNS
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for Opportunities to bid.
They might not see your announcements if printed elsewhere.
You undoubtedly want their bids on your contracts. Make sure of them on your next contract.
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Tell the Ætna engineers about your special facilities for completing the contract.
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POSITIONS VACANT—Business Opportunities and other undisplayed ads, 8 cents a word, minimum $2.00 an insertion.

POSITIONS WANTED—Evening work wanted, tutoring and other undisplayed ads of individuals looking for employment, 4 cents a word, minimum 75 cents, **payable in advance.**

ADD 5 WORDS for box number in undisplayed ads if replies are to any of our offices. There is no extra charge for forwarding replies.

DISCOUNT OF 10% if one payment is made in advance for 4 consecutive insertions of undisplayed ad.

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POSITIONS VACANT

POSITIONS WANTED

POSITIONS VACANT

CORRESPONDENCE desired with state road superintendents, foremen for quarry, grade, concrete and asphalt. Also steam roller engineers, steam shovel engineers, and stone crusher operators. Many positions open every spring. New York State Road Builders' Association, Room 604, Journal Building, Albany, N. Y.

INSTRUCTOR, graduate, mechanical engineer preferred, with good training in mechanics and mathematics, to teach hydraulics, mechanics of materials and laboratory. To begin February 1. State experience and salary desired. F. P. McKibben, Schenectady, N. Y.

MACHINERY salesman with thorough acquaintanceship in the trade in New York City and vicinity for position as manager of heavy machinery branch house. Only men of highest grade, technically trained, considered. P-539, Eng. News-Record.

STRUCTURAL steel and reinforced concrete detailers and designers. Give experience in detail, age, nationality, married or single, and how soon can report. Apply Southern Engineering Company, Charlotte, N. C.

STRUCTURAL steel detailers and checkers wanted for office and mill buildings, schools and stores. Location Southwest. Give full information first letter, including experience in detail, salary expected. Also nationality and state when could report. Experienced men only considered. All replies confidential. P-555, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

WANTED: civil engineer and superintendent of Streets, in New England town of 30,000. State age, education, experience, references and salary expected. P-568, Eng. News-Record.

EMPLOYMENT SERVICE

EXECUTIVES qualified for salaries of $2,500 to $25,000 and upward, are invited to communicate confidentially with the undersigned, who will conduct preliminary negotiations for such positions. A procedure is used which places you in the position of being approached, avoids jeopardizing present connections, and conforms to the most exacting personal and ethical requirements. Of particular advantage as a test of conditions, to determine the advisability of changing. Details mailed confidentially on receipt of name and address only, without obligating or committing you in any way. Established 1910. R. W. Bixby, Inc., 304 Lockwood Building, Buffalo, New York

EMPLOYMENT AGENCIES

EXECUTIVES. Confidential negotiations conducted with tact and dignity for professional positions. Engineering and administrative executives are courteously invited to send name and address only for literature describing my direct, successful method. Charles Clark P. O. Box 141, Newark, N. J.

EXECUTIVES

seeking positions find our confidential service extremely satisfactory. Let our Mr. H. H. Harrison confidentially negotiate for you suitable positions with proper employers, as he has successfully done for thousands of others since 1909. Inquiries invited.

THE NATIONAL BUSINESS BOURSE
Confidential Negotiators
Association Building—Chicago

POSITIONS WANTED

Civil Engineers

CIVIL engineer, graduate, six years' railroad and highway experience, available. PW-557, Eng. News-Record, Chicago, Ill.

CIVIL engineer, graduate, 30, two years surveying and drafting; three years in charge of railway location and construction; two years exporting to Latin America. Expert Spanish correspondent. Executive ability. Desires permanent position. PW-564, Eng. News-Record.

Surveyors

YOUNG engineer, four years' varied experience, college man, wants job on hydro-electric preliminary survey with opportunity of seeing the job through from start to finish. Position, salary and location immaterial. PW-562, Eng. News-Record.

Draftsmen and Designers

DRAFTSMAN with ten years steel detailing experience, buildings, conveyors; desires position New York City, commuting distance. PW-552, Eng. News-Record.

PRATT INSTITUTE
BROOKLYN, N.Y.

EVENING COURSES IN

STRENGTH OF MATERIALS
STRUCTURAL DRAFTING
STRESSES IN STRUCTURES
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GRAPHICS

Information on request or call at Pratt Institute, Grand Ave. Entrance between DeKalb and Willoughby Ave's. Monday, Tuesday or Thursday Evenings after Jan. 2.

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High grade courses prepared especially for the young engineer who needs experience, and for older men who need to "brush up."

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If you are in need of help in this line, get our printed literature; it contains complete information not only about the courses, but about the ability of their author. A lifetime of varied experience is embodied in these courses. Make use of it.

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Construction Men

Learn "Line" and "Grade" by Actual Practice.

Level, Transit, and Plane Table Work. "Running" of Farm, Stadia, Highway and Railroad Surveys.

Estimating

Day and evening courses. Booklet.

The Pan-American Engineering Society
39 West 17th St., New York City

POSITIONS WANTED

STRUCTURAL designer, detailer, 11 years' designing, detailing various buildings, bridges, industrial plant layout. Coal handling a specialty. PW-520, Eng. News-Record.

Superintendents

CONSTRUCTION superintendent wishes position, 20 years' experience sewers, water works, foundations, reinforced concrete, industrial plant construction, who has great faith in the future of concrete road and highway bridge construction, wants to get in that line with a first class firm. Salary to be gaged by my ability to make good. Job must be year around proposition. Seven years present location. East preferred, New York or Philadelphia. Interview. Available Jan. 1. PW-437, Eng. News-Record.

AGGRESSIVE, competent, practical general superintendent of construction; 20 years' practical experience on all types of buildings, with largest and best contractors; A-1 references; good organizer; salary $6,000. PW-497, Eng. News-Record.

CONSTRUCTION superintendent with ability to handle any part of the building business, wants to connect with either owner or builder. Can arrange to go anywhere. PW-553 Eng. News-Record.

SUPERINTENDENT or Construction Engineer, experienced all branches construction; efficient organizer, accustomed to handling large work, desires responsible position. Reasonable salary, location immaterial. Phone Bensonhurst 5311-W. C. O. Sutherland, 42 Bay 22nd St., Brooklyn, N. Y.

SUPERINTENDENT or carpenter foreman; 20 years' experience on steel and reinforced concrete construction; good organizer; can get results. PW-566, Eng. News-Record.

Miscellaneous

ARCHITECT, graduate of an Eastern university, 6 years' professional experience, seeks opening with engineering or construction concern. PW-565, Eng. News-Record.

CARPENTER, foreman, 28, experienced in reinforced concrete buildings. Will locate anywhere. Available Jan. 1. A-1 references. P. O. Box 541, Johnstown, Pa.

ENGINEER, at present in charge of estimating and costs for well-known New York City contractor, open for engagement after January 1st, 1922. Have thorough knowledge of prices and market conditions in territory as far West as Chicago and South to Kentucky. Well experienced as executive and in supervising building construction. PW-548 Eng. News-Record.

ENGINEER desires position with general contractor, estimating, superintending and purchasing. College man, eight years', field and office, experience on construction of power plants, steel mills and industrial buildings. Specialized in reinforced concrete and structural steel. Location anywhere. PW-527, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

Sales Over $200,000

WHO can use the services of a general all-around Second-Hand Contractors' Equipment man, one able to inspect, buy RIGHT, look after the overhauling, and then put same on the market to good advantage.

I can sell either NEW or USED EQUIPMENT for Dealer or Manufacturer.

My age, personality, experience and other qualifications, measure up to the desirable standard. Am strictly temperate, and can furnish the very best of references, as to character, ability, etc. Have you an opening for a man capable of managing a business, if so, get in touch with me. Am open for immediate engagement.

Sales for 1920 ran over $200,000.00.

Correspondence strictly confidential.

PW-463, Eng. News-Record.
10th Ave. at 36th St., New York City.

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be careful to put on envelope the key number in the ad and also local address of office to which reply is sent.

10th Ave. at 36th St., New York.
935 Real Estate Trust Bldg., Phila.
533 Leader-News Bldg., Cleveland.
1570 Old Colony Bldg., Chicago.
531 Rialto Bldg., San Francisco.

Important

Original letters of recommendation or other papers of value should not be enclosed to unknown correspondents — send copies.

0195

POSITIONS WANTED

ENGINEER married, 30, good health, go anywhere. All kinds surveys, railroad location, electrification, valuation, construction, highway location and construction, bridges, etc. Best references cheerfully furnished. Available at once. P. O. Box 475, Spencer, W. Va.

ENGINEER and executive desires connection of scope. Only those requiring the services of a high grade executive considered. Fourteen years' experience in construction work, purchasing, expediting, time and cost keeping, estimating. Organizer and systematizer. PW-561, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

EXECUTIVE assitant, Assoc. Mem. A. S. C. E., six years' broad experience since graduation, last year and half as assistant superintendent of structural and reinforcing steel fabrication plant, desires position offering training in accounting and industrial practice. PW-509, Eng. News-Record, Old Colony Bdg., Chicago, Ill.

PACIFIC coast manager for an Eastern industrial roofing manufacturer with an established office in San Francisco, would be interested in representing one or two companies making non-competing building materials. Is an engineer. PW-515, Eng. News-Record, Leader-News Bldg., Cleveland, O.

RESIDENT construction engineer, Civil engineer graduate, Age 29, Six years' experience in field and office work on railroad, street railway and pavement construction, also valuations and tax reports. PW-533 Eng. News-Record.

STEAM shovel operator, non-union. PW-538, Eng. News-Record.

EXTRA WORK WANTED

DESIGNING and estimating jobs wanted in reinforced concrete, sewerage and earthwork. W. C. Warren, C. E., 2530 Pennsylvania Ave., Baltimore, Md.

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supplies at short notice

Laborers and Skilled Help

for all kinds of construction works anywhere.

All Nationalities

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Phones: CANAL 1909-7560
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EXTRA WORK WANTED

DESIGNING, detailing, drafting, surveys (land or water), map work, estimates and reports, by experienced graduate C. E. Write me. I will call in New York City. EWW-560, Eng. News-Record.

THOROUGHLY equipped organization of experienced engineers and draughtsmen for construction surveys, topographical work and estimates for engineers, architects and contractors. Accurate and prompt service, John M. Farley, 12 East 44th Street, New York City, N. Y.

FIRST class detailing, checking, designing structural steel. Moderate prices. No job considered too small. Write Room 306, 126 Maiden Lane, City.

AGENTS AND SALESMEN

Salesman Wanted

ONE who is calling on power plants in any part of Pennsylvania, New Jersey, Delaware, Maryland to sell on commission as side line high grade article that is needed and wanted by every power plant AS-198 Eng. News Rec. Real Estate Trust Bldg. Phila., Pa.

Sales Engineer or Representative

One who is calling on power plants in Boston, Mass., and vicinity, Buffalo, N. Y. and vicinity to sell on commission as side line high grade article that is needed and wanted by every power plant. AS-513 Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

WANTED

Double-Drum Hoist Wanted

Suitable for handling 3,000 lb. on single line at 100 ft. per minute, with gas engine, or for belt drive. Give price and make. Samuel Mills, 1111 N. 16th St., Escanaba, Mich. Also pile driver 25 ft. to 30 ft. leaders; 1,500 to 2,000 lb. hammer long sills.

Interest in Structural Plant

Structural engineer with twenty years' experience wishes to buy part interest and become active in structural plant located in or near Chicago. Give full information in reply. W-510, Eng. News-Record.

Steel Truss Bridges

40 to 300 ft. New and second hand. W-563, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

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High-Grade Building Engineer

And estimator wishes to invest with services in general contracting company in South or Southwest. Only firms of high standing considered. B.O.-556. Eng. News-Record, Old Colony Bldg., Chicago, Ill.

Partner Wanted

Active partner for long established engineering business in the state of Massachusetts. Must be a college graduate with 5,000 to 10,000 dollars capital. Detailed information on request. BO-567 Eng. News-Record.

AGENCIES WANTED

Contractors, Railroad and Warehouse Equipment and Supplies. Cars, Trucks, Shovels, Cranes, Track Accessories, etc. St. Louis and South. Twenty years' experience. Well appointed office maintained in St. Louis.

AS-554, Eng. News-Record
1570 Old Colony Bldg., St. Louis, Mo.

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8701 Union Ave., Cleveland, Ohio

Boarding Camps, and Commissaries, operated for Railroads, Manufacturers, Contractors, Coal Mines, etc. We furnish laborers, mechanics and all classes of skilled help. Employment offices at Cleveland, O., Cincinnati, O., Toledo, O., Columbus, O., St. Louis, Mo., Indianapolis, Ind., Chicago, Ill., Danville, Ill., and Buffalo, N. Y.

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By Order of DOULLUT & WILLIAMS SHIPBUILDING CO., INC.,

Large quantities of

METAL and WOODWORKING MACHINERY, WATER TRANSPORTATION, RAILROAD and CONTRACTORS STOCK and EQUIPMENT, NEW MATERIAL, LUMBER, SUPPLIES, MISCELLANEOUS EQUIPMENT AND MATERIALS. 17 STEEL AND WOOD BUILDINGS.

VALUATION $2,250,000.00

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SMITH & JAFFE
PHILIP SMITH, *Auctioneers*

Sell by PUBLIC AUCTION Without Limit or Reserve.

January 11th, 12th, 13th and 14th at 11 AM. each day.

At DOULLUT & WILLIAMS SHIPBUILDING CO., INC., SHIPYARD,

Ft. Downman Road on Industrial Canal, NEW ORLEANS, LA.

9 New Steel Oil Barges, 2 Twenty Ton O & S Locomotive Cranes, 5 Portable Ship Cranes Complete, 3 Sullivan Air Compressors, 2000 cu. ft. cap., 4 Babcock & Wilcox, A & T 250-hp. Boilers, 2 Tug Boats, 100 and 500-hp. New Curtis Hydroplane.

16 Pile Drivers, complete with Lidgerwood, American and Lambert double cylinder, double drum Hoisting Engines and Boilers with Turn-Tables and Vulcan No. 1 and No. 2 Steam Hammers.

Metal and Woodworking Machinery, radial drills, universal millers, sensitive drill presses, bolt threaders, and nut tappers, planers, turret and engine lathes, pipe machines up to 9 in., punches and shears, plate tables, steam hammers, grinders, countersinking machinery, bull riveters, band, swing and rip saws, jointers, saw filers and other woodworking machinery, 3 plate and angle furnaces.

35—**Motors** up to 40 hp., 3 phase, 60 cycle, 440 volts.
8—**Flat Cars,** standard gauge, 5 push cars.
2—**Steam and gas portable air compressors,** Westinghouse floating air compressor on barge.
Hoisting Engines, pumps, floating pile drivers, drop hammers.
Overhead and Jib Cranes.
Steel Tower and Tanks up to 50,000 gal.

Lincoln Portable Welding Machines, pneumatic air drills, air riveting, chipping and caulking hammers, air hose, dollies, riveting sets, air tool repair parts, 50 bending slabs, hydraulic jacks, 30 and 50 ton acetylene welding and cutting torches, Hauck burners, 50 chain hoists up to 6 ton cap., high speed drills, reamers, taps and countersinks, vises, blacksmith tools, forges, anvils, etc.

OFFICE, HOSPITAL AND CAFETERIA FIXTURES AND EQUIPMENTS.
500 TONS RIVETS, BOLTS, NUTS, STEEL, BRASS, COPPER AND OTHER METALS

QUANTITIES OF NEW AND USED LUMBER

Ship Chandlery:

Ladders, stanchions, grab rods, shackles, blocks, thimbles, sockets, caulking cotton, linoleum, mattresses, cable rope, floodlight, etc.
Enormous quantities pipe, pipe fittings, valves, hardware, electric, plumbing and steam fitting supplies, paints and oils.
Ten International Time Recorders, watchman's clocks, riot guns, blue printing machine.

Motor Cars:

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Buildings and Improvements will be sold Saturday, January 14th at 1 P.M.

17 High Grade Steel, Brick and Wood Buildings to be sold for wrecking. 400 tons, 60 lb. rail, electric wire and telegraph poles, water and air piping, fire hose, fire extinguishers and other land improvements.

All water and rail facilities for shipping.

Street car marked "Villere" to Jitney bus direct to shipyard

Shipyard Open for Inspection commencing Thursday, January 5th, continuing daily to time of sale.

For catalogues and further particulars write or wire to

FITZPATRICK-TILL AUCTION CO., Inc.
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SMITH & JAFFE
68 West 45th St., New York City, N. Y.

DOULLUT & WILLIAMS SHIPBUILDING CO., Inc
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Madison Square District

Offices, $600 to $1,350, best light in town, 170 Fifth Avenue, corner 22nd Street, Twelfth Floor. See superintendent or Charles G. Edwards Company, 321 Broadway, Worth 520.

FOR SALE

Ford Dump Trucks

Six (6) one-ton Ford steel body dumping trucks; only run 50 miles; cost $772 each; will sell for $535 each. Trucks in good condition. Michael Barber, Box 622, Connellsville, Pa.

For Sale By Owner

12-Ton Buffalo-Pitts Roller 3 wheel, just reflued and tested, double cylinder, first-class condition. Road Graders, Tar tank wagons, Mixers, Road forms, Pipe, tools, etc., location New York State. FS-546 Eng. News-Record.

FOREIGN BUSINESS

Engineer Sailing

for England, France, Germany and Austria desires to represent American firms, handling building and architectural material. Will also act as buyer for importers. FB-562, Eng. News-Record.

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Two No. 4 Keystone, 1 Mc. . B Erie and 1 Austin trenching machine. Will take contract or rent. Washburne Engineering Co., Locust Valley, L. I.

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Steam Shovels for rent with crews or work taken by contract.

Dinkeys and cars or teams furnished.

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Second-Hand Transits and Levels

Guaranteed in Good Order and Adjustment.

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Department D

FOR RENT

Keystone Excavators

For Ditching or Grading—With Crew.

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Satisfaction guaranteed or money refunded. Write for complete list and catalogue of our high grade instruments and supplies for civil engineers, surveyors, mining, builders, contractors, etc.; 40 years' experience in repairing instruments of all makes at reasonable prices. Prompt service.

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YARD FOR
CONTRACTORS' EQUIPMENT
Industrial Service Co., Lincoln, N.J.

FOR RENT

No. 0 Austin Trencher

W. G. FRITZ CO., Inc.
West Orange, New Jersey

Trenching Work Wanted

For one No. 0 Austin, gasoline driven, for ditches 32 in. to 42 in. wide; maximum depth 18 ft.; and one 1921 Model Austin, all caterpillar, gasoline driven, for ditches 20 in. to 30 in. wide; maximum depth 8 ft. Machines now at Jersey City, N. J.

S. L. ALLISON
1953 Hudson Terminal Bldg., New York

For Every Business Want: "Think SEARCHLIGHT *First"*

Used Contractors' Equipment

WANTED

4—A frame derrick car fittings, 10 x 10 boom, 12 x 12 mast, capacity not less than 6,000 lb., length of boom 30 ft., clam shell and regular hoisting operation.

2—Double drum hoist engines, cylinders, 8½ x 10 in., equipped with boiler, to be Ohio Standard.

2—Electric hoists, double drum with boom swinger, 55 hp., 3 phase, 60 cycle, 220 volt, A.C. motor, variable speed.

2—No. 3½ S Dake swinging engines.

E. H. LATHAM COMPANY
60 East Broad St., Columbus, Ohio

WANTED

225—2¼-in. x 9-ft.

BOILER FLUES

B. F. POPE
325 Law Building, Baltimore, Md.

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1—No. 8-K Gates, almost new.
1—36 x 42 Allis Chalmers Jaw Crusher. Manganese fitted.
1—No. 3 Austin Portable plant, complete.

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20—1½ yd. Koppel 24 in. Gauge two way dump cars.
40—4 yd. Western two way 36 in. gauge dump cars. Rebuilt.
20—1½ yd. Western two way 24 in. gauge dump cars.

LOCOMOTIVES

1—20 ton Porter Saddle Tank, with Ohio Boiler, 36 in. gauge.
1—13 ton Shay Geared, 36 in. gauge. Almost new.
1—60 ton 6 wheel Baldwin Switcher. 200 lb. pressure.

Midwestern Company
140 So. Dearborn St., Chicago, Ill.

Locomotive Cranes
Steam Shovels
Locomotives and Cars
Priced to move quickly

PHILIP T. KING
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Gasoline Locomotives

2—Plymouth 3 ton, 36 in. gauge, with 4 cyl. Red Seal Continental Motors, offered at a bargain.
Also several 6 and 7½ ton, 24 in. gauge Locomotives.

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Compressors—Boilers—Mixers
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Send for our list on rebuilt machinery

HOISTING ENGINE SALES COMPANY
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Immediate Delivery

1—Spar Mast (Oregon Pine), 64 ft. long, 24 in. base, 20 in. top.
2—Spar Booms (Oregon Pine), 55 ft. long, 16 in. centre, 14 in. ends.
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The above are completely ironed and in perfect condition; never been used.
1—25 kw. General Elec. Gasoline D.C. Generator No. 924,338, 43-54 hp., Volts 115 to 230; speed 560 r.p.m.
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1—Lidgerwood Elec. D.D. Hoist, 22 hp., 220 Volts A.C. Current, new.
2—35 ft. DeMayo Steel Scrapper Conveyors, Cap. 75 tons per hr. New 2268 ft. Baldwin No. 53 Spec. Sprocket Chain.
24—25 Teeth Sprockets; 8—18 Teeth Sprockets; 48—12 Teeth Sprockets; all for above chain.

For full particulars write or apply to

Selma Mercantile Corporation
15 Moore Stree., N. Y. City

FOR SALE

1—13E Foote Paving Mixer....	$600.00
2—Cleveland Caterpillar Tractors, each	850.00
2—Wheel Scrapers for tractor use, each	40.00
1—Portable Sand and Gravel Screen, complete with elevator, hoist and bins	1,000.00
1—¼ yd. Hayward Orange-Peel Bucket	200.00

H. W. FITZ GERALD
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Asphalt Plant Special

We have for sale one rebuilt No. 1 Merriman 2000 yd. One-Car Steam Melting Asphalt Plant. In fine condition, on which we can make good delivery.

Here's an opportunity to get a real plant quickly and at a right price. Better get in touch with us immediately.

The East Iron & Machine Co.
Lima, Ohio

ELECTRIC HOIST

Thomas, standard Y-frame, double drum, gear-driven, cone friction, equipped with 35 hp. variable speed motor, 220 volt, D.C., compressor type control and Thomas automatic brakes.
Has seen very little service. Price $1,200.

OVERLAND CONSTR. CO.
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In Stock—Ready for Delivery

1—8 in. x 14 in. **Buchanan.**
1—9 in. x 15 in., No. 4, portable, with elevator, **Champion.**
1—10 in. x 15 in., No. 4CF, portable, with elevator and screen, **Champion.**
1—10 in. x 18 in. with elevator, **Reliance.**
1—11 in. x 26 in., No. 5, **Champion.**

Also a large stock of Concrete Mixers, Air Compressors, Hoisting Engines, Pumps, Boilers, and other Contractors' Equipment.

L. F. Seyfert's Sons, Inc.
437 N. 3d Street, Philadelphia, Pa.

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is read by men whose success depends upon thorough knowledge of means to an end—whether it be the securing of a good second-hand piece of apparatus at a moderate price, or an expert employee

The Best Proof

of this is the variety of this journal's Searchlight ads. Without a constant and appreciable *demand* for such machinery or services, by its readers, the market-place which these advertisements represent could not exist for any length of time.

Are *you* using the Searchlight Section?

0134

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All the Equipment listed below is owned by us and may be inspected at one of our own warehouses.

CONCRETE MIXERS

60—Concrete Mixers. Sizes 28S, cap. 1 yd.; 21S, cap. ¾ yd.; 14 S, cap. ½ yd., and 10S, cap. 1/3 yd. With steam or electric power; with side loaders or batch hoppers. Following makes: Marsh-Capron, Koehring, Milwaukee, Ransome, Smith, Smith-Chicago, Rex, Lakewood, Foote, Cube, or Oshkosh.

31—7S, capacity 1 bag, with low charging platforms; with gasoline engines.

PAVING MIXERS

5—10 E Paving Mixers. Two Koehring and 1 Chain Belt, with boom and bucket, and 1 Foote, with chute, all steam-driven; 1 Smith-Chicago, with chute, gas power.

2—1 Bag Koehring; steam; chute.

CRANES

5—Byers Auto Cranes. One on caterpillar; 4 on traction wheels, with 30-ft. boom, with ½ or ⅝-yd. clamshell buckets.

1—15-ton 8-wheel O. & S.; 40-ft. boom.

1—20-ton 8-wheel Industrial; 50-ft. boom.

HOISTS

9—Three-drum Hoists, with or without boilers. Sizes 10 x 12, 9 x 10, 8¼ x 10, and 7 x 10, with separate swingers for derrick work. All makes.

35—Two-drum Hoists, with or without boilers. Sizes 10 x 12 9 x 10, 8¼ x 10, 7 x 10, 6¼ x 10, 6 x 8, and 5 x 8. Can be equipped with holding drum for bucket work. Several special Cableway Excavator or Drag Scraper Hoists. All makes.

2—Gasoline Hoists.

CLAM SHELL BUCKETS

21—Clamshell Buckets. Sizes ½, ¾, 1, 1½, or 2 yd. All makes.

DERRICKS

14—Stiff-Leg Derricks. Five new, 9 used; with booms ranging from 50 to 75 ft.; mast legs and sills in proportion, for handling ½, ¾ or 1-yd. buckets.

2—All-Steel Guy Derricks; mast 105 ft.; boom 90 ft.; bucket operating.

RAIL AND TRACK

5 miles 24-in. Gauge Portable track with steel ties, made up of 20-lb. rail with switches.

1,000 ft. 36-in. Gauge Portable Track with steel ties, with two switches.

LOCOMOTIVES

1—Vulcan, 9 x 14, 36-in. gauge, steam saddle tank.

2—Koppel 24-in. gauge steam, 6½ tons.

STEAM SHOVELS

3—Type O Thew Steam Shovels, on traction wheels, with ⅝-yd. dipper.

1—Bucyrus, 70-ton, on MCB standard gauge trucks, with 2½-yd. dipper.

2—Keystone Excavators.

ROAD ROLLER

1—10-ton 3-wheel Austin Gasoline Roller.

TRENCHING MACHINE

1—Buckeye; wheel type, gasoline; size No. 3.

We carry a complete line of Boilers, Compressors, Cars, Engines, Elevators, Hoppers, Steam Hammers, Rollers, Pumps, Spouting and Portable Track. Write or wire your requirements.

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CHICAGO: 1455 Lumber Exch.
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Phone, Spruce 5498

FOR SALE

LOCOMOTIVE CRANES

1—15-20 ton Brownhoist; 8-wheel, M.C.B.; 40-ft. boom bucket operating drums.

1—15 ton O. & S.; 8-wheel, M.C.B.; 70-ft. boom, with 25 ft. removable section; double power driven drums; also dragline attachments, equipped with outriggers.

1—15 ton Industrial; 40-ft. boom; bucket drums.

OVERHEAD CRANES

2—30-ton, 50-ft. span, Morgan Traveling Cranes; 4 motors; 220 volt D.C. Westinghouse equipment.

STEAM SHOVELS

1—Marion, Model 31; 1-yd. dipper; Shop No. 3068.

1—Marion, Model 28; ⅝-yd. dipper; Shop No. 3328.

1—Marion, Model 40, on railroad trucks; 1½-yd. dipper.

NEW TRACTION CRANES

Full Revolving Road Cranes; 7-ton capacity, with ¾-yd. bucket.

LOCOMOTIVE

American 6-wheel Switcher. Cylinders 18 x 24-in., drivers 44 in., wheel base 11 ft. 6 in., weight 60 tons.

BOILERS

1—30 hp., locomotive type, portable boiler, with engine mounted on top.

1—50 hp., firebox, locomotive type; 100 lb. pressure.

ASPHALT PLANT

1—Iroquois 800-yd. Road Asphalt Plant; complete.

CRUSHER OUTFIT

1—Gates, 18-K; Gates 60 in. x 20 ft. revolving screens; 42-in. bucket elevator; 80-ft. centers.

We carry in stock concrete mixers, air compressors, road rollers, hoisting engines, buckets, pipes, cars and other equipment and machinery.

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Contractors' Equipment

Stacks, Tanks, Pipe, Etc.

What are your requirements?

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Picks and Pick Handles

⅞-lb. Railroad Picks.
36-in. Hickory Handles.
Below Market Prices.

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ROAD BUILDERS' PLANT

FOR SALE

Road-Rollers; Pavers; Shovels; Keystone Excavators; Locomotives; Track; Dump and Flat Cars; Hoists; Cranes; Graders; Finishers.

All necessary Equipment for complete plant.

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SACRIFICED!!

Five 5-Ton Garford Trucks
$1,200 Each

Equipped with Wood Automatic Hoists and Metal Dumper Bodies. All in good running order. These trucks were taken over by a bank and must be sold. Price quoted is less than 25% of cost. Terms can be arranged if secured.

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1—Haiss Digging Type Wagon Loader, 6-hp. Novo engine, $800

1—Haiss Self-Propelled Loader, $1300.

1—Haiss 1 ½-yd. High Power Bucket.

1—½-yd. Owens Clam Shell Bucket.

GEORGE HAISS MFG. CO., Inc.
140th St. and Rider Ave. to Canal Place, N. Y.

STONE CRUSHER

1—Gyratory No. 6-F with fitting.

Holbrook, Cabot & Rollins Corp.
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FOR SALE—PAVERS

3—Steam, chute discharge; overhauled and in first class condition.

No. 10 E. Foote	$1,000.00
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No. 11 Koehring	1,750.00
10-Ton Monarch Steam Road Roller	1,500.00

THE T. J. LANE EQUIPMENT CO.
Springfield, Ohio.

No. 14 Koehring Paver

with boom and bucket, steam operated. Price $1,450.00 f.o.b. Chester.

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Commercial Trust Bldg., Philadelphia

FOR SALE

RAILROAD DITCHER

Standard American Steel Lattice Boom; complete with dipper and full equipment. Completely overhauled and ready for immediate shipment.

SOUTHERN IRON & EQUIPMENT CO.
Atlanta, Ga.

IMMEDIATE DELIVERY—BARGAIN PRICES—Wire, Write, Phone

HOISTING ENGINES AND DERRICKS

30—Stiff Leg Derricks; 55-ft. booms, 35-ft. masts, with steel blocks and cable.
3—Thomas "Y" Frame Double Drum Electric Hoists, cut-gear driven, cone friction, with 30 hp., 220 v., D.C. motors.
15—Thomas "B" Frame Double Drum Electric Hoists, cut-gear driven, cone friction, with 20 hp., 220 v., D.C. motors.
13—General Ordinance Cargo Hoists, 9 x 9, double cylinder, single drum.

PLANT EQUIPMENT

1—Steel Dock Crane; 10-ft. steel tower, with two steel masts 36 ft. long, and two 70-ft. steel booms; 4,000 ft. cable. Capacity, 30 tons on each boom.
2—American Angle and Plate Furnaces, low pressure, fuel oil burners.
1—Acetylene Gas Generating Plant, Navy type, with compressor and acetone pump.
15—Steel Frame Push Cars.
Lot 2, 3, 4 and 5-ton Triplex Chain Hoists.
Lot High-Speed Reamers and Drills.
Lot Dies and Punches.
Lot Pipe Fittings, Valves and Supplies.
10,000 lineal ft. Forced Draft System 3-in. Heater Tubing cut to 43-in. lengths.

ELECTRICAL EQUIPMENT

1—20-Panel Slate Switchboard, fully mounted with A.C. and D.C. instruments, oil switches, circuit breakers and automatic switches.
3—Carlyle Finch Searchlights, 120 v., D.C., 35 amps.; 18-in. lens.
Lot Transformer Testers, Ammeter Shunts, Voltmeters, etc.

CONTRACTORS' EQUIPMENT

3—Barber-Green Portable Belt Conveyors, with electric motors.
1—5-ton Industrial Loco. Crane.
1—45-ton 4-wheel Switching Engine with tender.
Lot Galvanized Wire Rope, ½-in. to 1½-in.
Lot Steel and Wood Blocks.
Steel Pipe, welded seams, with one loose flange, made of 3 in. x 3 in. angle, as follows: 6 pcs. 15-in. dia. x ¼ in. x 9 ft. long; 47 pcs. 17-in. diam. x ¼ in. x 8 ft. 7 in. to 10 ft. long; 21 pcs. 19-in. diam. x ¼ in. x 16 ft. long; 6 pcs. 23-in. dia. x ¼ in. x 7 ft. 9 in. long; 48 pcs. 24-in. diam. x ⅜ in. x 7 ft. 9 in. to 18 ft. 10 in. long.

PNEUMATIC TOOLS

100—Boyer Chipping and Caulking Hammers.
77—Boyer Riveting Hammers, No. 60.
16—Keller Rivetting Hammers, No. 60.
8—Keller Rivetting Hammers, inverted handles, No. 50.
61—Thor Drilling Machines, No. 42.
1100—Caulking Tools and Chisels.
3000—Rivet Sets, flush, buttonhead and flat.

500 TONS RIVETS

Panhead, buttonhead, conehead and countersink in sizes ⅝-in. to 1⅛-in. dia.

STEEL AND LUMBER

1,200 tons of Lloyd's Inspected Ship Plates.
500,000 ft. of L. L. L. Pine and Fir, 8 x 8 to 12 x 12 in. 15 ft. to 45 ft. lengths.

MACHINERY

1—Pond 42 in. x 30 ft. Triple-Geared Engine Lathe, arranged for motor drive.
1—Baush Multiple-Spindle Heavy-Duty Drill Press; 8 adjustable spindles and centre spindle.
3—Wood Working Machines; four-sided planer and moulder; 36-in. band saw; square-head jointer, 12-in.

SHIP MACHINERY AND EQUIPMENT

6—Scotch Marine Boilers (knocked down).
2—Triple Expansion Engines, 2800 hp.
4—Condensers; 3,500 and 600 sq. ft. cooling surface.
Lot Forced Draft Fans, Anchor Windlasses with extra wildcats, Blake-Knowles Simplex Pumps, 33 Five-ton Cargo Booms, Steering Gears, Evaporators, Feed Water Heaters, Circulating and Air Pumps, Anchor Chains, Life Boats, Smoke Stacks, Ship Chandlery.

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FOR SALE

25 HOISTING ENGINES
33 AIR COMPRESSORS
20 CONCRETE MIXERS
100 MOTORS
20 DERRICKS
30 DUMP BUCKETS
3 CABLEWAY OUTFITS
100 PUMPS
3 LATHES
10 LOCO. BOILERS
10 UPRIGHT BOILERS
12 SWINGING ENGINES
40 AIR RECEIVERS

PIERCE FOUNDATION CORPORATION
738 East 141st St., New York City
Phone: Melrose 7678

HOISTING ENGINES

Lidgerwood—10 x 12 D.C. dbl. drum with swinging gear levers banked in quadrant No. 24270.
Lidgerwood—10 x 12 D.C. Dbl. drum No. 25074.
Lidgerwood— 9 x 10 D.C. Dbl. drum No. 27645.
Lidgerwood—8¼ x 10 D.C. Dbl. drum No. 14268.
Lidgerwood—8¼ x 10 D.C. 3 drum No. 25671.
Lidgerwood—8¼ x 10 D.C. Dbl. drum with swinging gear base to receive boiler No. 27094.
Lambert— 9 x 10 D.C. Dbl. drum with swinging gear No. 10738.
Mead-Morrison—9 x 10 D.C. 3-drum.
Lidgerwood—7 x 10 D.C. Dbl., drum.
Flory—7 x 10 D.C. Dbl. drum.
Lidgerwood—6¼ x 10 D.C. Dbl. drum
Mundy—5½ x 10 D.C. Dbl. drum.
All the above are skeleton type, without Boilers.
Lidgerwood—8¼ x 10 D.C. Dbl. drum, boiler & swinging gear.
Lidgerwood—8¼ x 10 D.C. Dbl. drum, Boiler.
Mundy—8 x 12 D.C. Dbl. drum and boiler.
Lidgerwood—7¼ x 10 D.C. Dbl. drum and boiler and swinging gear.
Mundy—7¼ x 10 D.C., Dbl. drum and boiler and swinger.
Mundy—6½ x 12 D.C. Dbl. drum and boiler.
Mead-Morrison swinging engines, & Dake. Single drum types, Cableway and Haulage engines. Electric Hoists.
All located our yards Baltimore.

DERRICKS

STIFF LEG TYPE

5—Derricks Booms 65 ft., 14 x 14 Mast 38 ft., 14 x 14 Bull Wheel.
3—Derricks Booms 62 ft., 14 x 14, Mast 38 ft., 14 x 14 Bull Wheel.
6—Derricks Booms 45 ft., 16 x 16, Mast 28 ft., 18 x 18 Bull Wheel.

GUY DERRICKS

1—Derrick Boom 80 ft., 14 in. Round. Mast 87 ft., Rd. 3 line.
1—Derrick Boom 60 ft. Round, Mast 70 ft., Rd. Bull Wheel.
1—Steel Derrick 80 ft., Boom 10 Ton.
1—Steel Derrick 70 ft., Boom 30 Ton.

Any of the above derricks we will furnish to handle Grab Buckets and equip with Bull Wheels. A number of Traveling Derricks on hand, send for complete list. Most of these are located in our yard.

Send for complete list of equipment

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MARYLAND EQUIPMENT & SUPPLY CO., Baltimore, Md.

Locomotive Cranes
FOR SALE OR RENT

3—8-ton Industrial.
2—10-ton Industrial.
1—15-ton Browning.
1—20-ton Industrial.

For immediate delivery at Brooklyn, N. Y.
MARVIN BRIGGS, Inc.
167 Sixth St., Brooklyn, N. Y.

BRAND NEW

MARION STEAM SHOVELS

MODEL 61, 2½-YARD, 70-TON.
MODEL 70, 3¼-YARD, 80-TON.

Immediately available.

For quick sale, and for cash, can offer the above at real bargain prices.

W. R. WADDELL,
50 Church Street, New York

LOCOMOTIVE CRANES
FOR SALE OR RENT

1—20-ton 8-wheel Browning; 50-ft. boom, double drums, ASME boiler; slightly used condition, like new.
2—30-ton 8-wheel Browning; 50-ft. booms, double drums, ASME boilers, outriggers; condition like new.

GREY STEEL PRODUCTS COMPANY
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FOR SALE OR CHARTER

CLAM SHELL DREDGE

5-yd.; fine condition; complete equipment.

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Buyers Everywhere know "Searchlight"

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0238

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17 Western 20-Yd. All-Steel Air Dump Cars

GENERAL DESCRIPTION

Gauge—Standard, 4 ft. 8½ in.
Capacity, level full—20 cu. yds.
Capacity, heaped full—26 cu. yds.
Bed dimensions—26 ft. x 9 ft. x 2 ft. 4 in.
Length of car, over all—31 ft.
Height of car, over all—8 ft. 3 in.
Air dumping arrangement—Vertical cylinder with side chains.
Capacity of trucks—80,000 lbs.
Weight, about 48,000 lbs.
M. C. B. construction throughout and U. S. Safety Appliance Standard.

All cars slightly used, Guaranteed good as new.

Clapp, Norstrom & Riley Equipment Company

14 South Canal Street, Chicago

FOR SALE OR RENT

STEAM SHOVELS

2—Type B Erie, revolving; traction wheels; ¾-yd. dippers.
1—70-ton Bucyrus; 2½-yd. dipper.
1—18-B Bucyrus, revolving; traction wheels; ⅞-yd. dipper.
1—150-B Bucyrus Shovel, 2½ yd.
1—175-B Bucyrus Shovel, 3½ yd.
1—Little Giant; 1¼-yd. dipper, on railroad trucks. Equipped with standard boom and dipper; also with tunnel boom and dipper.

BOX AND REFRIGERATOR CARS

20—60,000 lb. capacity Box Cars, 34 ft. 7 in. long.
20—60,000 lb. capacity Refrigerator Cars, 36 ft. long.

LOCOMOTIVES

2—6-wheel Switchers—Standard gauge; 40-ton.
2—American Passenger; Type 1-4-0; standard gauge; 50-ton.
5—9 x 14 Dinkeys (3 Porters); 2 Vulcans; 36-in. gauge.
2—10 x 16, 18 ton Porters, 36 in. gauge.

DRAGLINES

1—Class 7 Bucyrus, steam; caterpillars; 42-ft. boom; 1-yd. bucket.
1—Class 14 Bucyrus caterpillars; 60-ft. boom; 2-yd. bucket.
1—Class 14 Bucyrus; skids and rollers; 60-ft. boom; 2-yd. bucket.
1—Class 24 Bucyrus; skids and rollers; 100-ft. boom; 3½-yd. bucket.
1—Class 24 Bucyrus Electric, skids and rollers, 100 ft. boom, 3½ yd. bucket.
1—Model 36 Marion, caterpillar, 50-ft. boom, 1½ yd. bucket.
2—Monighan 1-T Walker, gasoline; 40-ft. boom; 1-yd. bucket.
1—Monighan, A-1, steam; traction wheels; 40-ft. boom; 1-yd. bucket.
1—No. 2 Monighan, steam; skids; 60-ft. boom; 2-yd. bucket.
1—No. 2½ Monighan, skids and rollers, 80 ft. boom; 2-yd. bucket.
1—No. 4 Monighan, on trucks; 100-ft. boom; 2½-yd. bucket.

TRACTOR & TRAILERS

1—10-ton Holt Caterpillar 40-60.
3—5-ton Troy Trailers.

The above list is constantly changing. No matter what your machinery requirements are, write us—we may have it.

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J. E. HAETTEN & CO., INC.
50 Church Street, New York
Telephone Cortlandt 324

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2—10-ton Buffalo Pitts 3-wheel Rollers.
2—5-ton Buffalo-Pitts Rollers.
1—5-ton Erie Tandem Roller.
1—14-ft. Austin Paver, practically new.
2—21-E Austin Cube Pavers.
1—Smith Simplex Paving Mixer.
3—National Swinger D.D. D.C. Electric Hoist, 220 volt, 3-phase, 60 cycle, G. E. motors.
1—10 x 12 Flory Hoist, complete; 90% new.
1—¾-yd. Thew Shovel.
1—150-hp. Fitzgibbons Heavy Duty Marine Type Boiler; 150 lb. steam.
1—Gravel Pit Equipment including revolving screen, hopper, bins, engine, boiler and belting.
1—½-yd. Clamshell Bucket, practically new.

We also handle a full line of used and new contractor's equipment and machine tools. We solicit your inquiries.

FOR SALE OR RENT

Concrete Mixers, Lakewood Concrete Towers, Hoisting Engines, Derricks, Pumps, Gasoline Tractors, Steam Hammers, Buckets and Compressor outfits.

Edward Ehrbar, Inc., 270 West St., New York City

FOR SALE

1 Case 10-ton Road Roller.....$1500
1 Baker 10-ton Road Roller.....$1300
1 Gallon Crusher $300
1 Fort Wayne Crusher and Screening Plant $900

THOMAS MITCHELL
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HOISTING ENGINES

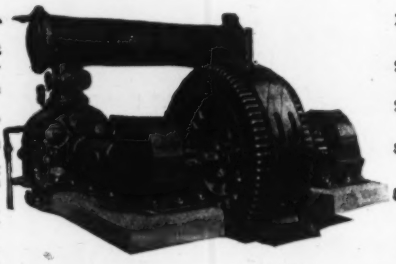
1—9 x 12 Three-Drum Stroudsburg, with boiler mounted on engine frame, like new.
1—9 x 12 Two-Drum Stroudsburg, same as above.
1—8¼ x 10 Lidgerwood, two-drum, with base for boiler on main frame.
1—7½ x 10 Mundy, two-drum, with attached swinger.
1—7 x 10 Lidgerwood, skeleton, two-drum.

Great Lakes Equipment Company
Webster Bldg., Chicago, Ill.

FOR SALE OR RENT

COMPRESSORS

66 ft. Ingersoll-Rand 7 x 6 x 3¼ x 6 type F.R.2., steam driven, high pressure.
150 ft. Ingersoll-Rand 9 x 8 E.R.1., belt driven compressor, complete with tank, unloader and fittings. Motor to suit.
210 ft. Chicago-Pneumatic, oil driven, on skids.
210 ft. Chicago-Pneumatic, gasoline driven, on wheels.
250 ft. Chicago-Pneumatic, 12 x 10, steam driven.
2—355 ft. Ingersoll-Rand, 12 x 10 x 12 x 10, F.R.1., steam driven. Complete with fittings.
700 ft. Ingersoll-Rand, 17 x 12, E.R.1., complete with unloader, idler, all fittings. Motor to suit.
1—549 ft. Chicago-Pneumatic, class NSB, belt driven Compressor. Motor to suit.



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1190 ft. Ingersoll-Rand, Imperial type X-3, high duty, steam driven, duplex air comp.
2—1482 ft. Ingersoll-Rand, type X.B.2., with 250 hp., 220-440 v., 60 cy., 3 ph. motor, and all fittings.
2—1500 ft. Laidlaw-Dunn-Gordon, latest type feather valve, belt driven Compressors. Motors to suit.
850 ft. Laidlaw-Dunn-Gordon, 17 x 10 x 14, complete with unloader and all fittings.
5—2674 ft. Ingersoll-Rand, class P.R.E.-2, direct connected to General Electric, 440 and 2300 volt, 60 cy., 3 ph. Synchronous Motors. Complete with exciters, panels, switches, air receivers and all fittings.

Also Boilers, Buckets, Cranes, Cableways, Derricks, Hoists, Generators, etc.

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Electric Mine Pump

5-in. GOULD Three Stage Centrifugal Pump, 500 gallons capacity, 450 foot head, close coupled to and driven by 100 H.P. 2200 volt, 3 phase, 60 cycle Motor. Practically new, thoroughly overhauled and guaranteed.

Three Hundred Other Pumps

Send for our December list of the largest stock in the United States of slightly used or thoroughly overhauled MACHINE TOOLS, POWER, ELECTRICAL AND CONTRACTORS' EQUIPMENT. Satisfaction Guaranteed or Money Refunded.

WICKES MACHINERY CO.
Jersey City, N. J.
Established 1900.

For Sale—Pumping Engine

One horizontal triple expansion plunger and ring pattern Worthington 3,000,000 gallon pumping engine surface condenser in suction and attached air pump. 12 x 19 x 30 inch steam cylinders, 15 inch plungers, 24 inch stroke.

In splendid condition. Duty new 90,000,000 foot pounds. Steam pressure 120 pounds, water pressure 100 pounds, fire pressure 125 pounds.

Price f. o. b. cars $2,500.00. Delivery about March 1st, 1922. Location, Hanahan, S. C.

Full specifications on request to Commissioners of Public Works, No. 14 George Street, Charleston, S. C.

Air Compressors

2—710 C.F.M. Class WJ3 Sullivan Angle-Compound Belt Driven Air Compressors. Practically good as new. Immediate shipment.

A. McMILLAN
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IMMEDIATE DELIVERY

Send us your inquiry, Steam Shovels

50—75-hp. Single Drum Hoists, 25 cy. mtrs.
25-50-40-hp. Double Drum Hoists, 60 cy. mtrs.
Nos. 3-5-6-7½-9K and 18 K CRUSHERS.
2—6 and 12-ton Gasoline Locomotives.
10 x 12 in. Steam Hoist, 3 drum, with boiler.
65-hp. Locomotive Type Boiler.
150-hp. Boiler, buttstrap with Jones stkr., 156-lb.
No. 9K GATES CRUSHER, REGULAR DRIVE.
25-50-100-200-kw. and larger Turbo and Eng. Sets.
50 to 5,000-ft. Steam, Belt and Elec. Drive Comp's.
10, 15 and 20-ton Locomotive Cranes.
LARGE AMOUNT CONTRACTORS' EQUIP., TOWERS, ETC.

Send us your inquiries Contractors' Equip., Centrif. Pumps, Quarry Equip., etc.

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PUMPS

1—No. 5 Pulsometer.
1—No. 3 Emerson Sinking Pump.
1—17 and 12 x 10 x 15 Worthington Duplex Fire Pump.
1—Duplex steam force pump 7½ x 5 x 8.
2—3 in. Suction Diaphragm Pumps on skids attached to gasoline engines.

HOIST

1—7 x 10 D.C., D.D. Lidgerwood with boiler.

BOILERS

3—H. R. T. Boilers, 150 hp. butt strapped.
100—Boiler Tubes, 4 in. x 16 ft.

AIR COMPRESSOR

1—Westinghouse 9½ in.

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1—78-in. Putnam Wheel Lathe.
1—300-ton Niles Hydraulic Wheel Press.

CULLEN-FRIESTEDT CO.
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Locomotive Type Boilers

1—40 hp. Ames on wheels complete with engine on frame.
1—100 hp. Pennsylvania on skids, Hartford test.

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Telephone Beekman 3911

PORTABLE COMPRESSORS

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FOR SALE OR RENT
Gasoline, Steam & Electric Compressors
Jackhammers, Riveting Hammers, Chipping Hammers and Concrete Breakers

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PUMP MOTOR DRIVEN

8-in. Suction, 6-in. Discharge, Worthington Volute, 800 gallons at 65-ft. head, Direct Connected 25 HP., Westinghouse A. C. Motor, 220-440 Volts, 3 Phase, 60 Cycles, 1120 RPM., all on a cast iron base; $450. This set practically new. Second-hand machinery of all kinds.

H. R. WILSON MACHINERY CO.
St. Louis, Mo.

AT A GREAT BARGAIN

75 hp. Double Drum Reversible Flory Engine.
100 hp. Economic Type Erie Boiler.
All Steel Dragline.
Osgood 18 Steam Shovel.
15—Four-yard Heavy Duty Side Dump Western Cars.

JAMES CARROLL
917 Wainwright Bldg., St. Louis, Mo.

COMPRESSORS

2,678 and 1,726 ft. PRE-2 I. R. Electric.
1,190 ft. I. R. Imperial; belt and steam.
2—741 ft. O-CB Chicago, 2-stage; belt.
522 ft. Laidlaw, 2-stage; belt.
396 ft. WB-2 Sullivan; steam.
179 ft. NF-1 I. R.; steam.
145 ft. ER-1 I. R.; belt.
2—202 hp. Mass. Std. HRT Boilers; 165 lb.

A. LEE ELLIS
10 High St., Boston 9, Mass.

Carbic and Milburn Lamps

No. 2 and No. 3
New. In Original Cases.
Below Market Prices.

DEWEY SUPPLY CORPORATION
18 W. 34th St., New York City

FOR SALE

International Harvester, 50 hp. Twin Cylinder, Horizontal Stationary Kerosene

ENGINE

good running condition, $1000.

ALLEGANY LUMBER CO.
Fillmore, N. Y.

CONTRACTOR'S PLANT

FOR SALE OR RENT

Compressors, towers, hoists, mixers, pumps, conveyors, concrete chute, saw rigs.

E. GEORGE & CO., Inc.
407-9 Broadway, New York City

1—8 hp. D.C. Single Drum Hoist Boiler.
1—16 hp. D.C. D.D. Hoist Boiler.
1—7 x 10 D.C. D.D. Meade-Morrison Boiler.
1—8 x 12 D.C. D.D. Mundy-Ohio-Mass. Boiler.
20—4-yd. Steel Draft Beam Western Cars.
1—50 hp. Loco. Type Boiler on skids.

Empire Engineering and Equipment Co.
Empire Bldg., Pittsburgh, Pa.

PIPE | PIPE | PIPE

Have Ready for Immediate Shipment the Following New Pipe

STEEL

Two carloads ½ in. black pipe threaded and coupled.
One carload ¾ in. black pipe plain ends.
One carload 4 in. galv. pipe threaded and coupled.
One carload 5 in. black pipe threaded and coupled.
One carload 6 in. black pipe threaded and coupled.

GENUINE WROUGHT IRON

One carload 3½ in. black pipe threaded and coupled.
Three carloads 3½ in. galv. pipe threaded and coupled.
One carload 6 in. galv. pipe threaded and coupled.
Can offer same at prices far below the prevailing market.

Albert & Davidson, Inc., 256-264 Oakland St., Brooklyn, N.Y.

WROUGHT-PIPE

New, Second-hand and
Mill Seconds

BOILER TUBES

EAGLE PIPE & SUPPLY CO.
General Offices-Woolworth Building
NEW YORK CITY

WROUGHT PIPE

WITH PERFECT THREADS AND COUPLINGS

BLACK	GALVANIZED	BLACK	GALVANIZED
40,000 ft. 1"	15,000 ft. 1"	4,000 ft. 3½"	1,000 ft. 3½"
30,000 ft. 1¼"	10,000 ft. 1¼"	8,000 ft. 4"	4,000 ft. 4"
15,000 ft. 1½"	9,000 ft. 1½"	4,000 ft. 5"	2,000 ft. 5"
50,000 ft. 2"	10,000 ft. 2"	2,500 ft. 6"	1,500 ft. NEW 12"
20,000 ft. 2½"	5,000 ft. 2½"	2,000 ft. 8"	galv. spiral flanged
15,000 ft. 3"	15,000 ft. 3"	2,500 ft. 10"	pipe.

For price apply:

MARINE METAL & SUPPLY CO., 167 South Street, New York City

PIPE

New, Untested, Black Steel Pipe for every industrial and manufacturing purpose—random or cut lengths. We have a large stock of first quality mill material.

Immediate shipment

Davidson Pipe & Supply Co.
861 Western Avenue, Pittsburgh, Pa.

PIPE

CAST IRON, B & S

20,000 ft. 4 in. Class "C"
50,000 ft. 6 in. Class "C"
50,000 ft. 8 in. Class "C"
3,000 ft. 10 in. Class "C"
3,000 ft. 12 in. Class "C"
500 ft. 14 in. Class "A"

WROUGHT STEEL

25,000 ft. 3½ in.
15,000 ft. 4 in.
3,000 ft. 4½ in.
3,000 ft. 5 in.
2½ in. to 8 in. Blk. Steel
10, 12 and 16 in. O.D. Blk. Reading.

FITTINGS, B & S.

1,000 tons, all sizes.
Valves, all sizes.
Hydrants, Corey & Matthews.

FITTINGS, Cast and Malleable

Screwed and Flanged.
Std. Ex. Hvy. All Sizes.
Valves, Std. Ex. Hvy. Hydraulic.

IMMEDIATE SHIPMENTS—Cast Iron Pipe, from Penniman, Va. Parlin & Mays Landing, N. J., and Chester, Pa.

CHARLES J. GRANT SUPPLY COMPANY, Boyertown Bldg., Phila., Pa.

GREENPOINT

SECOND-HAND PIPE

All sizes—with new threads and couplings.
Also cut to sketch
GREENPOINT IRON & PIPE CO., Inc.
330 Graham Ave., Brooklyn, N. Y.

PIPE

Large Stocks, New and Second Hand.
Immediate Delivery

L. & D. Metal & Supply Co., Inc.
1096 Flushing Avenue, Brooklyn, N. Y.

PIPE

SECOND HAND AND NEW

Large stock, all sizes.
Immediate Delivery

FRANK GRIFFITH
412-24 Moyer St., Philadelphia, Pa.

OIL LINE PIPE

Offered at much less than market prices

All or any part of 42 miles new, ten-inch, 41 lb., steel line pipe F. O. B. or F. A. S. New York. Inspected by Pittsburgh Testing Laboratories.

F. B. LYNCH,
Room 1200 2 West 45th St. N Y. C

WROUGHT IRON AND STEEL PIPE

New and second-hand. With new threads and couplings. All sizes from ⅛ to 12 in. Also cut to sketch.

DAVIDSON PIPE & IRON CORP.
436-40 Kent Ave., Brooklyn, N. Y.

Notice to Advertisers!

Owing to the holiday—Monday, January 2nd—the "Searchlight" pages of the January 5th issue of Engineering News-Record will close for press earlier than usual. Copy should reach us as follows:

For January 5th issue:

Display Ads—Copy required by 5 P. M., Friday, December 30th
Want Ads—Copy required by 10 A. M., Saturday, December 31st
Proposal Ads—Copy received as usual go up to 11 A. M., Tuesday, January 3rd

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PIPE

Large Stock All Sizes
New and Second Hand

REPUBLIC PIPE & IRON CORP.
1185-1223 Flushing Ave.
BROOKLYN, N. Y.

PIPE SECOND HAND

With new threads and couplings; also cut to sketch.

PFAFF & KENDALL
Ferry & Foundry Sts., Newark, N. J.

For Pipe Buyers — **Engineering News-Record's PIPE PAGE** — *For Pipe Sellers*

CONTRACTORS' OVERHAULED EQUIPMENT

PUMPS

1—18 in. Morris centrifugal connected direct to double vertical steam engine, 12 x 12 Cylinder 10,500 gal., 25 ft. head.
1—10 in. Erie belt driven double suction centrifugal, 3500 gal., pulley 24 in. dia., 14 in. face.
1—20 in. Worthington Turbine, belt driven, pulley 34 in. diameter by 38 in. face.
1—15 in. Buffalo, belt driven, pulley 30 in. dia. by 22 in. face.
1—10 in. Morris Volute, belt driven.
1—Platt Duplex 9 x 5½ x 10 force pump.
1—Worthington Duplex 6 x 4 x 6 force pump.
1—Knowles Duplex 4½ x 2¾ x 4 force pump.
1—Cameron force pump No. 7.

CARS

20—12 yd. Western dump cars, standard gage.

CHANNELLING MACHINES

2—Sullivan Y8 Channelling Machines.

LOCOMOTIVES

1—10 x 16, 18-ton Vulcan Dinkey, 36-in. gage.
2—10 x 16, 18-ton H. K. Porter, Dinkey, 36 in. gauge.

ROCK DRILLS

3—Tripod rock drills, steam or air operated.
1—Drill sharpener, Sullivan.
1—Drill sharpener, Leyner.

BOILER

1—50 hp. Loco. type.

STEAM SHOVEL

1—Model 20 Marion, 1¼ yd. dipper.

TRUCKS

3—4-wheeled House Moving Trucks.
2—Heavy Machinery Truck Wagons.

COMPRESSORS

1—18 x 18¼ x 24 Ingersoll-Sargent Steam Driven, straight line, 656 f.p.m.
1—Sullivan 2 stage 20 x 12½ x 16 Belt Driven, 887 f.p.m.
1—12 x 12 x 16 Rand Duplex, Steam Driven, cap 500 f.p.m.
1—Westinghouse compound, 10½ in.
2—Westinghouse 9½ x 9½ x 10.

BUCKETS (CONCRETE)

2—McMyler 1½ yd. Center Line Dump.
4—Lockwood 2½ yd. Bottom Line Dump.
2—Steubner 1½ yd. Controllable.
2—Steubner 2 yd. Controllable.
1—Steubner ¾ yd. Controllable
2—Atlas 1½ yd. Bottom Dump.
4—Top dump circular coal Buckets 3½ ft. D. x 3 ft.

MISCELLANEOUS

1—Lidgerwood unloader, 25-ton pull.

UNITED STATES EQUIPMENT CO., 208 S. La Salle St., Chicago

LOCOMOTIVE CRANES

3—20-ton, 8-wheel Browning, 50 ft. boom, double drums, A. S. M. E. boiler, M.C.B. trucks, outriggers, excellent condition.
2—15 ton, 8-wheel Industrial 40 ft. boom. Hook block A. S. M. E. Boiler.
1—15 ton Brownhoist, 8-wheel, 50-70 ft. boom.
1—7½-ton Browning Electric.
1—7½-ton Industrial.

HOISTING MACHINERY CO.
50 Church St., New York

LOCOMOTIVE CRANE

15-ton, 8-wheel McMyler, Bucket Handling, Lap Joint Boiler

Mechanical Factory SUPPLIES

STEEL LOCKERS NEPONSET SHINGLES

National Aniline and Chemical Co.
21 Burling Slip, New York, N. Y.

RENT OR SELL

Locomotive Crane

30-40 ton **Industrial.** Guaranteed same as new. 80 ft. boom (3 sections, will handle 100 ft. boom). Double Drum Bucket Handling, M.C.B., A.S.M.E. Boiler. Immediate delivery; ready now.

Also 20 ton MCB McMyler, 50 ft. boom, steam shovels, locomotives, hoisting engines, mixers, derricks, etc.

Contractors' Machinery & Supply Company
Wabash Building, Pittsburgh, Pa.

LOCOMOTIVE CRANE

1—Used Model "D" 20-ton capacity 8-wheel MCB "OHIO Locomotive Crane; double drums, full cab, 50-ft. boom; located near New York; condition excellent, price right. To secure wire order subject immediate inspection.

TITAN EQUIPMENT COMPANY
Hudson Terminal Bldg., New York
Phone, Cortlandt 1111

FOR SALE OR RENT

Equipment owned by us sold under absolute guaranty subject to trial in service

STEAM SHOVELS

1—14-B Bucyrus Full Revolving Steam Shovel, mounted on caterpillar traction. Shop No. 2162, ⅝-yd. dipper.
1—70-C Bucyrus, Shop No. 1700 2½-yd. dipper.
1—45C Bucyrus, Shop No. 1202; 1¾ yd. bucket.
1—65-ton Bucyrus, Shop No. 394, 2½-yd. dipper.

DUMP CARS

17—20-yd. Standard Gauge Western All-Steel Air Dump Cars; 80,000-lb. cap., vertical cylinders, side chains. Practically new.
24—16-yd. Standard Gauge Western Air Dump Cars, steel underframes, box girder doors.
90—12-yd. Standard Gauge Western Air Dump Cars, steel underframes, 19-ft. beds, box girder doors.
1—Western 36-in. gauge Spreader Car.

LOCOMOTIVES

1—Standard gauge 14 x 20 cylinder 4-wheeled Vulcan saddle tank locomotive, Shop No. 1501. Built 1910. Weight 39 tons; air brakes; 180-lb. steam pressure.
1—Standard gauge, 18 x 24 cylinder 6-wheeled, switching Locomotive, with separate tender, weight 50 tons on drivers.
1—Standard gauge 10 x 16 cylinder 4-wheeled Porter saddle tank Locomotive. Shop No. 3607, wt. 19 tons. Air brakes, automatic couplers.
2—36 in. gauge, 12 x 18 cylinder Porter 6-wheel switchers, with separate tenders. Weight on drivers, 48,000 lb., 9 ft. rigid wheel base. 180 lb. steam pressure, air brakes. Built in 1918, never used.
1—36-in. gauge 10 x 16 cylinder American 18-ton 4-wheel saddle tank Locomotive.
2—24-in. gauge, 7 x 12 in. cylinder, Baldwin 4 wheeled saddle tank Locomotives. Shop Nos. 34798 and 34820. Wt., 8 tons.

DRAGLINE EXCAVATORS

1—No. 2 Monighan Steam-Operated All-Steel Dragline; 60-ft. boom; 2-yd. Page bucket, mounted on skids and rollers.
1—Class 14 Bucyrus dragline; 60 ft. boom, 2 yd. Page bucket; skids and rollers.
1—No. 1-A Monighan All-Steel Steam-Operated Dragline, mounted on traction wheels; 40-ft. boom; 1-yd. bucket.

MISCELLANEOUS

1—25-ton Industrial Locomotive Crane, No. 3261, new in 1916; 50-ft. boom with 20-ft. extension; M.C.B.
7—Camp Cars, 45 ft. long; 60,000 lb. capacity.
1—Stiff-leg Derrick, brand new, 60 ft. boom, complete with all fittings and 14 ft. bull wheel, no cable. Bargain.
1—⅝-yd. Owen Clamshell Bucket.
1—¾-yd. New Owen Clamshell Bucket.
Industrial Track—1600 ft. 36 in. gauge track made up of 25 lb. rail in 15 ft. sections with 6 and 7 steel ties to section; curve included.
9—2-ton Kelly-Springfield Trucks, standard box bodies with removable sides. Practically new.
20—Sets Standard Chain Tug Harness, with collars, brand new.

Clapp, Norstrom & Riley Equipment Co.
12 and 14 So. Canal St., Chicago

Equipment Bargains

COMPRESSORS

210 cu. ft. Chicago Pneumatic, oil-driven.
150 cu. ft. Ingersoll, electric driven.
800 cu. ft. McKiernan, steam driven.
144 cu. ft. Ingersoll-Rand, portable, gasoline-driven.

STEAM SHOVELS

Type B Erie, Mass. boiler.
18-B Bucyrus, Mass. boiler.
36 Marion, caterpillar traction.
No. 4 Keystone Excavator.

MIXERS

7-S Knickerbocker, gasoline engine.
28-S Ransome, motor driven.
14-S Koehring on skids motor driven.
28-S Chain belt steam driven
14-E Koehring Paver on traction wheels.

HOISTS

6½ x 10 Lambert D.D.D.C. with boiler and swinger.
9 x 10 Mead Morrison D.D.D.C. skeleton, cableway.
8½ x 10 Lambert D.D.D.C. with boiler.
9 x 10 Mead Morrison three drum skeleton.
50-hp. American D.D. Electric.
9½ x 12 Lambert 3-drum with boiler.
50 HP. American D.D. Electric, A.C. Motor.

CRUSHERS

10 x 18 Reliance on skids.
13 x 30 Farrell, manganese jaws.
No. 8 Gates gyratory.
No. 5 Austin Gyratory.

CRANES

15 ton O. & S. Mass. Boiler.
15 ton Brown Hoist, Mass. Boiler.
Byers, wheel traction, with bucket.

These are merely suggestions.
Send for our new list of Contractors and Quarry Equipment.

THE HUBBARD-FLOYD CO., Inc.
MAIN OFFICE: Grand Central Palace, New York, N. Y. Vanderbilt 1465.
BOSTON OFFICE: Old South Building. Main 4233

Immediate Shipment—Large Tonnage of

Bridge Girders and I Beams

Also STEEL RAILS—New and Relaying

M. K. FRANK
Frick Building, Pittsburgh, Pa.

FOR SALE—4—70 ft.

TURNTABLE GIRDERS

Will sell separate or assembled for Turntable use.
Full information upon request.

WALSH CONSTRUCTION CO.
Shickshinny, Pa.

We specialize in

STEEL SHEET PILING

GET OUR PRICES BEFORE YOU BUY OR SELL

ZELNICKER IN ST. LOUIS

Rails, Cars, Locomotives, Boilers, Tanks, Pipe.

FOR SALE

Floating Pile Driver

PRACTICALLY NEW
WONDERFUL BARGAIN
WRITE FOR PRICE, FULL PARTICULARS AND PHOTOGRAPH

GEO. F. WALKER
Box 18, Hampton, Virginia

FOR SALE

Floating Pile Driver
Orange Peel Bucket
Rock Crusher
Miscellaneous Contractors Plant

JARRETT-CHAMBERS COMPANY
30 East 42d St., New York

Steel Sheet Piling

Lackawanna and United States in various lengths for immediate shipment.

BROWN & SITES CO.

Main Office:
30 Church St., New York City

STEEL PILING

BOUGHT AND SOLD

UNIVERSAL EQUIPMENT COMPANY
Niagara Falls, N. Y.

STEEL SHEET PILING

Immediate Shipment.
175-pcs. 25 ft. Lacka. 14 in. arched.
225-pcs. 30 ft. Lacka. 14 in. arched.
First class driving condition.

MID CONTINENT EQUIPMENT AND MACHINERY CO.
Security Bldg., St. Louis, Mo.

TRENCHING MACHINES

1—Parsons Model, No. 60, steam; digs 20 ft. deep, up to 60 in. wide.
1—Austin, No. 1, steam; digs 20 ft. deep, up to 54 in. wide.
1—Austin, No. 00, steam; digs 10 ft. deep, up to 29 in. wide.
1—Austin Backfiller, gasolene; 35-ft. boom.

JAMES McELROY
11 S. LaSalle St., Chicago

I BEAMS

400 tons of 6-in., 12¼-lb. Steel Beams, 15 ft. 9 in. long.
200 tons of 10-in., 25-lb., 14 to 16-ft. Beams.

HOISTING ENGINE

1—Twin Drum Coal Hoist, made by G. Haiss Mfg. Co., N. Y. Cylinders 8x12; drums 24-in. dia., 16-in. face; 37-in. dia. flanges; 40 hp.; grab ½ ton.

BOILERS

4—Manning Vertical Boilers, 500 hp.; will insure 175 lbs. Immediate delivery.
1—H.R.T. Boiler, 72-in. dia. x 16 ft. 3 in.; 125-lb. pressure.
3—72-in. dia. H.R.T. Boilers, 19 ft. 6 in. long; 135-lb. pressure.
4000 ft. 1⅝-in., 6 x 19 C. S. Hauling Wire Cable. Also some 1-in. and 1¼-in. Galvanized Cable.

TANKS

All sizes of Tanks, open and closed, suitable for storage of gasoline or oil, in stock at our Boston Yard.

DRUMS

200—110-gal.

The Perry, Buxton, Doane Company
214 West First St., South Boston 27, Mass.

1—TRENCH EXCAVATOR, Parsons, Model F (78 in.), steam, wheel traction, complete in working order, f.o.b., Wisconsin, $2600.

2—BACKFILLERS, Parsons, Model 10, one year old complete in working order, each $1600.

1—PAVING MIXER, Foote, 13-E, steam, 2 Bag Batch, chute, $850.

9—TRAILER WAGONS, Troy, 3½ yard, reversible, bottom dump, 8 in. steel wheels, $1900.

H. Y. SMITH CO.
Milwaukee, Wis.

FOR SALE

PARSONS' TRENCHING MACHINE

For Immediate Delivery

JOHN B. McLANE & COMPANY
Newport, Kentucky

RAILS

RELAYING RAILS

of all weights. Write us for prices. Track material and equipment.

H. M. FOSTER COMPANY
Continental Bldg., Baltimore, Md.

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RAILS

60-lb. Relaying Rail

Two hundred tons with angle bars. First-class. Pennsylvania delivery other sections in stock.

E. H. WILSON & COMPANY
COMMERCIAL TRUST BUILDING
PHILADELPHIA

56-LB. RAILS

1000 tons, 56 lb. Relayers with Angle Bars. Immediate shipment from stock.

MERCHANTS STEEL & SUPPLY CO.
208 S. La Salle St., Chicago, Ill.

RELAYING RAILS

15,000 tons 30 lb. to 100 lb. Sections with necessary Bars.

LURIA BROS. & CO., INC.,
OFFICES: Reading, Pa.; Lebanon Pa.; New York, N. Y.; Pittsburgh, Pa.; Boston, Mass.
YARDS: Reading, Pa.; Donaghmore, Pa.; Lebanon, Pa.; Pittsburgh, Pa.

RAILS

RAILS and TRACK

150 tons Relaying 60-lb. Rails
75 tons Relaying 75-lb. Rails
200 tons Relaying 80-lb. Rails
16-lb. 24 in. gauge Portable Track

HENRY LEVIS & CO.

Commercial Trust Bldg., Philadelphia

GET OUR STOCK LIST OF

RAIL BARGAINS

THE MORRISON & RISMAN CO.
Buffalo Philadelphia
Pittsburgh New York

BUYERS—Send me your inquiries.

STEEL TEE RAILS

LOCOMOTIVES
STEAM SHOVELS
CARS

Sell me your surplus.
E. C. SHERWOOD, 50 Church St., New York

YOUR RAIL if advertised here, will reach a field of over 30,000 readers including many big **BUYERS**

EQUIPMENT BARGAINS

At

Old Hickory

Machinery, of all kinds, from the World's greatest Powder Plant, now offered to American Industry at prices far below present cost.

Just a few of the offerings:

44—823 hp. Stirling Boilers.
3—500 hp. Keeler Boilers.
27—350 hp. Corliss Engines.
1—3000 kw. Generators.
2—630 ft. Air Compressors.
2—2570 ft. Air Compressors.
10—14 in. 8,600 g.p.m. Pumps.
2—10 in. 3,750 g.p.m. Pumps.
4—14 in. 7,500 g.p.m. Pumps.
6—16 in. 8,500 g.p.m. Pumps.
6—14 in. 8,100 g.p.m. Pumps.
2—Underwriters Fire Pumps.
16—Hydraulic Pumps.
200—Boiler Feed Pumps.
200—Blowers.
2000—Steel Tanks, all sizes.
1—50 ft. 20 ton, R.R. Crane.
1—110 ft. Fixed Radius Crane.
1—2-6-0 Locomotive.
2000—Wood Tanks, all sizes.
35—Electric Locomotives.
5000—Narrow Gauge Cars.
500—Electric Motors.
11—Sulphuric Acid Plants.
5—Nitric Acid Plants.
Transmission Equipment.
Process Equipment.
Chemical Equipment.
Miscellaneous Equipment.
Etc. Etc. Etc.

Write for Special Bulletins as follows:

No. 7—Tanks, all kinds.
No. 8—General Equipment.
No. 10—Pumps.
No. 11—Blowers.
No. 12—Industrial Cars.
No. 14—Chemical Equipment.
No. 15—Transmission.
No. 16—Building Material.

Nashville Industrial Corp.
Jacksonville, Tenn.

Contractors' Guaranteed

EQUIPMENT

Immediate Shipment!!

LOCOMOTIVES

1—65-ton 2-6-0 Mogul Type Standard-Gauge Locomotive, cylinders 19-in. diameter, 24-in. stroke, working steam pressure 160 lb. Manufactured by American Locomotive Works.
1—45-ton 8-wheel 4-4-0 Standard-Gauge Locomotive, cylinders, 18-in. diameter, 24-in. stroke, working steam pressure 160 lb. Manufactured by Pittsburgh Locomotive Works.
2—5-ton Porter Compressed Air Locomotives 24 in. gauge cross-compound cylinders, size of high pressure 4½-in. low pressure, 9-in. stroke 10-in. capacity air tank 41 cu. ft., charging pressure 1200 lb. pressure at throttle 250 lb. tractive force 1450 lb. Complete with hand brakes and electric headlights.
1—18-ton 4-wheel Drive Standard-Gauge Locomotive; saddle tank, cylinders 10-in. diameter, 16-in. stroke, working steam pressure 110 lb. link and pin couplers. Manufactured by Rhode Island Locomotive Works.

HOISTING ENGINES

1—9 x 12-in. Russel double cylinder, double drum Hoisting Engine, heavy duty type, without boiler.
4—7½ x 10 in., double cylinder, single geared drum Hoisting Engine, with reversing throttle valves.
1—6¼ x 8 in. Clyde double cylinder, double friction drum Steam Hoisitng Engine, with two winch heads, drums 14-in. diameter, 20-in. between flanges complete with fittings (No Boiler). Base is made for boiler.

ELECTRIC TRAVELING CRANES

2—Brand New 10-ton overhead Electric Traveling cranes, 31 ft. 0-in. span; 3 motor type 440-volt, A. C. 60 cycle, 3 phase.
Brand new 3-ton overhead Electric Traveling Crane, 35 ft. span; 3 motor type; 220 D. C.

DUMP CARS

150—12-yd. Western & Oliver all-steel, two-way Dump Cars, standard gauge.
50—1¼-yd. 20-in. gauge, wood body, two-way Dump Cars.
3—36-in. gauge, 8-wheel Flat Cars, 40,000-lb. cap., 7 ft. wide, 20 ft. long, wheels 24-in diameter.

STEAM SHOVELS

6—95-ton Bucyrus Railroad Type, 5-yd. dipper; 90 per cent new.
10—70-ton Bucyrus Railroad Type, 2½ to 3-yd. dipper; 90 per cent new.

BOILERS

2—150-hp. Triple-Riveted Return Tubular Boilers, 66 in. diameter, 20 ft. long; 125-lb. pressure.
2—125-hp. Triple-Riveted Return Tubular Boilers, 66-in. diameter, 18 ft. long; 100-lb. pressure.
2—100-hp. Triple-Riveted Return Tubular Boilers, 66-in. diameter 16 ft. long; 100-lb. pressure.
1—60-hp. Locomotive Firebox Boiler, 48-in. diameter, 16 ft. 6 in. long overall; 100-lb. pressure.
1—35-hp. Vertical Tubular Boiler; 95-lb. pressure.
1—25-hp. Vertical Tubular Boiler; 95-lb. pressure.

AIR COMPRESSORS

1—1,800-ft. cap. Class W.B.2 Sullivan Steam-Driven Air Compressor; 100-lb. pressure.
1,900-ft. Ingersoll; steam-driven.
1—Single-Tandem Fuel Oil-Driven Compressor, Chicago Pneumatic Tool Co. No. S. 0-2. 309 cu. ft. capacity.
1—19-in. x 12-in. x 16-in. Ingersoll-Rand—2-stage Compressor; 888 cu.ft. 100 lbs. pressure, Belt-driven.

GENERATORS and MOTORS

7—Westinghouse 250-hp. Motors, Type C.C.L., 440 volt, 60 cycle, 3 phase motors, speed 514 r.p.m., with base and starters. Can be furnished with pulley or flange coupling.
1—60-kw. Triumph Generator, 125 volt, D.C., belted.
1—300-kw. G. E. Rotary Converter, 25 cycle.
1—30-hp. Northern 110-volt, D.C. Motor.

CENTRIFUGAL PUMPS

1—6-in. Swaby Horizontal Centrifugal Pump.
1—8-in. Fairbanks-Morse Horizontal Centrifugal Pump.
1—12-in. Worthington Horizontal Centrifugal Pump.
1—24-in. Kingsford Horizontal Centrifugal Pump.

Our Free Bulletin No. 205 lists over 100 pages of Industrial Plant Equipment and General Supplies from our latest purchase.

Your copy is waiting! Ask for it now!

HARRIS BROTHERS CO.
38th and Iron Sts., Chicago, Ill.

READY FOR SERVICE

RAILROAD—CONTRACTORS
and
INDUSTRIAL EQUIPMENT
CARS
Standard-Narrow Gauge
COAL—FLAT—GONDOLA—DUMP—BOX
All Capacities
LOCOMOTIVES
ELECTRIC—STEAM—GASOLINE
LOCOMOTIVE CRANES
STEAM SHOVELS

THOMAS F. CAREY CO.
120 Liberty Street, New York, N. Y.

P. E. Francis & Co.

Railroad and Industrial Equipment
Marquette Bldg., Chicago, Illinois

ASPHALT PLANTS
BOX CARS
FLAT CARS
GONDOLA CARS

FOR RENT AND SALE

13—6-yd. rebuilt dump cars, std. gauge.
20—12-yd. Westerns, like new std. gauge.
50—60,000-lb. capacity flat and box cars.
1—Western standard gauge spreader.
1—Osgood 18 revolving shovel, traction wheels, No. 794, ¾-yd. bucket, used 8 months.
1—Marion 36 combination shovel and dragline, No. 4725, caterpillar traction 1½-yd. bucket, used 4 months, built March, 1921.
1—Marion 76 steam shovel, No. 3503, standard gauge.
1—P. & H. gasoline dragline and crane, caterpillars, 40 ft. boom, ½-yd. bucket, new 1921.
1—Northwest gasoline dragline and crane, caterpillars, 40 ft. boom, ½-yd. bucket, new 1921.
1—No. 2 Brownhoist four-wheel gasoline crane, std. ga., 40 ft. boom, ½-yd. bucket, new 1921.

LOCOMOTIVES

1—40-ton 17 x 24 in. four-wheel switcher.
2—New 25-ton six-wheel Porters, separate tender, 36 in. gauge.
2—18, 14 and 10-ton Vulcans, 36 in. gauge.

INDUSTRIAL EQUIPMENT CO.
McCormick Building, Chicago, Ill.

CLAM SHELL BUCKETS

½ and ¾ cu. yd. [illegible] per day $3.50
1 and 1¼ " " " " 4.50

FOR SALE [illegible] HAISS
For All Purposes
[illegible] and Rehabilitated

[illegible] 100th St. and Rider Ave. New York, N.Y.

STEAM SHOVEL

FOR SALE

Marion 28 on traction wheels, ¾-yd. dipper, can be seen at Jamestown, N. Y., in good working order.

JAMESTOWN CONSTRUCTION CO.
Jamestown, New York

SHOVEL

Type "O" Thew on traction wheels. Fine condition. Immediate Delivery.
Bargain Price.

L. A. GREEN,
First National Bank Bldg., Pittsburgh, Pa.

Brains Always Go Together!

So to speak:

The Curtis Publishing Co., The Ladies Home Journal, Saturday Evening Post, Country Gentleman, Philadelphia Public Ledger people—

Are exploiting the Man-of-Brains who has made such a great success of—

The Barrett Co. (Congoleum and Coal Tar Products)

The Bon Ami Co. (Orford Soap Co.) "Hasn't Scratched Yet"

The Man-of-Brains is Mr. William Hamlin Childs. Mr. Childs is quoted by the Ledger of Nov. 21st, as follows:

"One business I began with the purchase of a trade mark for $5000.00. Recently we refused $3,000,000. for that trade mark. Another corporation at the time I joined it, had a volume of business of about $5,000,000. Now it has a volume of around $80,000,000. a year."

Bon Ami, "Hasn't Scratched Yet," the soap;

"Congoleum," Roofs, etc., the Coal Tar Products, etc.,

Now listen and you'll know how Brains go together:

THE BARRETT CO., equipped their plants at the beginning WITH RIDGWAY ELEVATORS.

As the business grew from $5,000,000. to $80,000,000., RIDGWAY ELEVATORS WERE ADDED. Go down to Marcus Hook, Pa., some day and see a big bunch of Ridgway Elevators in the Congoleum plant. Also at Erie, Pa., and elsewhere.

THE ORFORD SOAP CO. at Manchester, Conn., make the Bon Ami soap.

THE ORIGINAL FACTORY WAS EQUIPPED WITH RIDGWAY ELEVATORS.

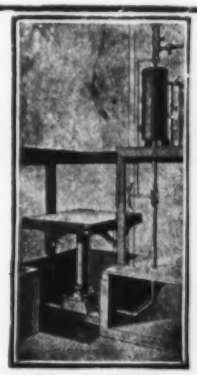
As the Trade Mark "Bon Ami, Hasn't Scratched Yet," grew from $5000 to $3,000,000 in the hands of Mr. Childs.

RIDGWAY ELEVATORS WERE ADDED TO THE GROWING FACTORY.

Isn't it funny, that all the Great Successes in the Land seem to be those which are run with sort of brains that

"HOOK 'ER TO THE BILER"

CRAIGE RIDGWAY & SON CO., Coatesville, Pa.
ELEVATOR MAKERS TO FOLKS WHO KNOW



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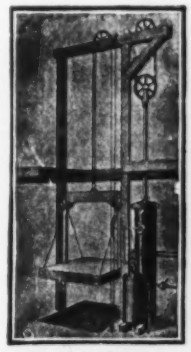
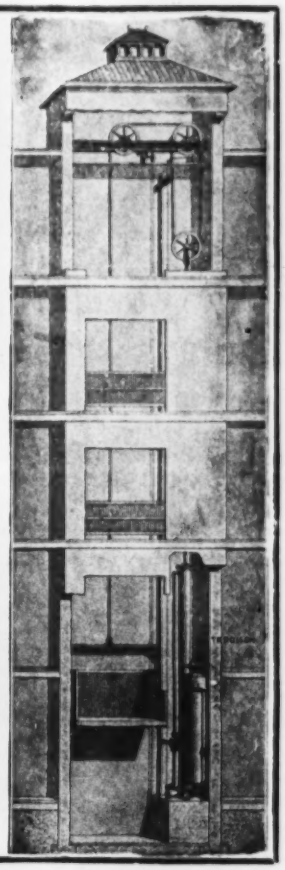


Double Geared



Special

HIGHWAY NUMBER

January 12, 1922

Published at the time of the 13th annual Good Roads Show which will be held at the Coliseum, Chicago.

Representing *News-Record* and its advertisers *at* the convention.

Offering manufacturers in the field an opportunity of putting an aggressive bid for highway business in an issue that will go to interested highway men—

At a time when they are actually seeking result-producing or time-saving methods.

Send space reservations and copy instructions early.

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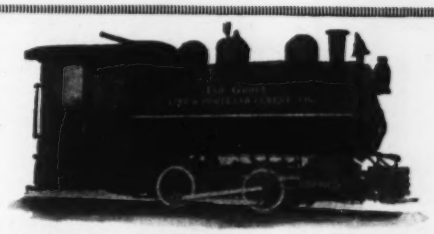

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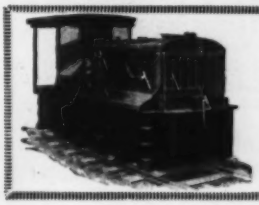

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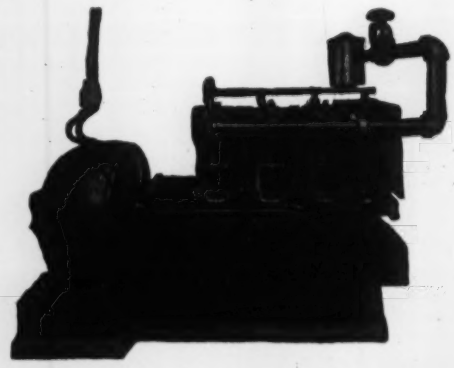

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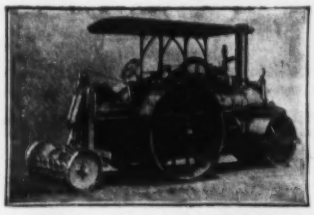

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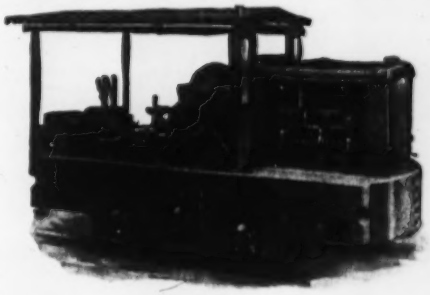

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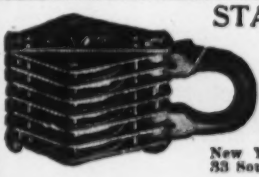

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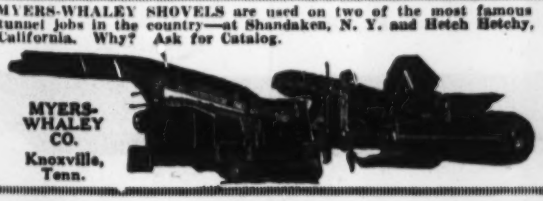

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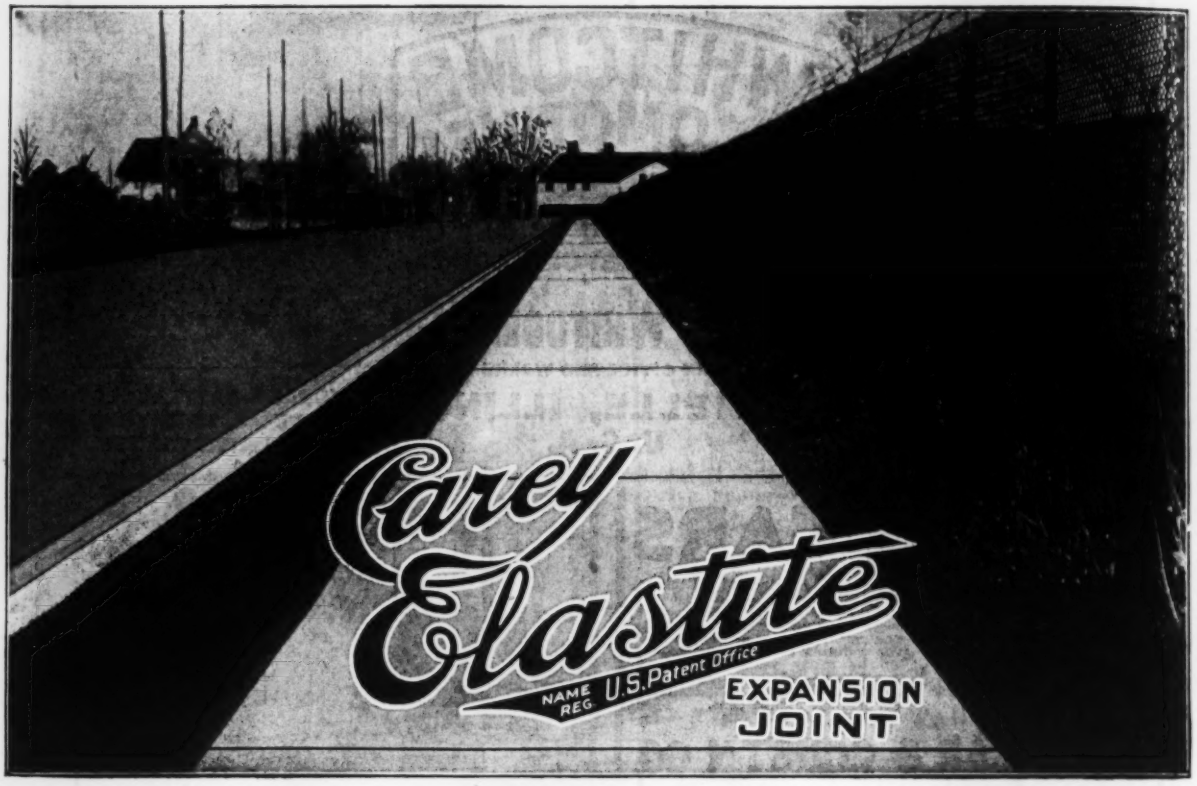

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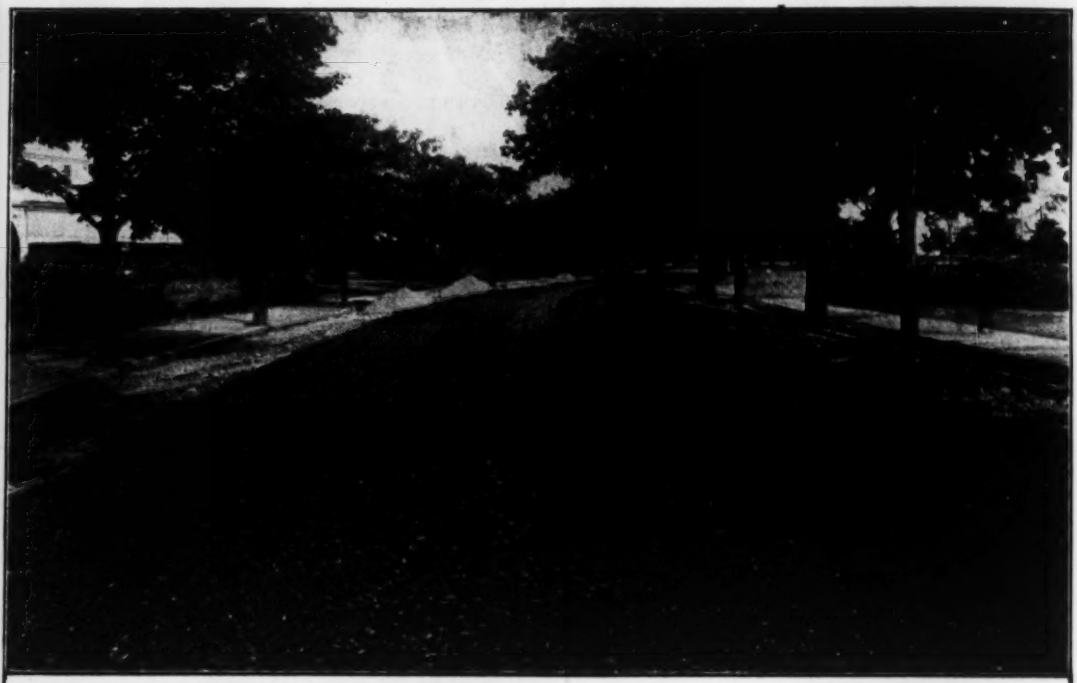

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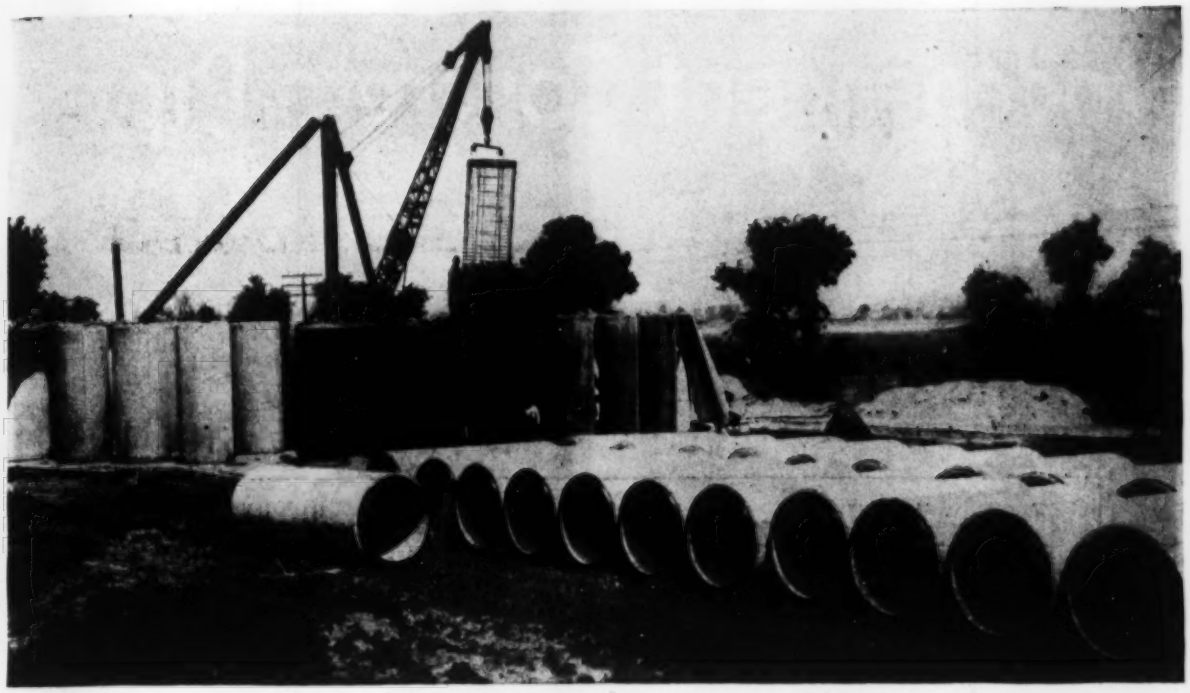

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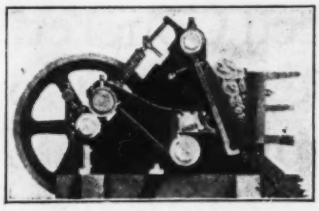

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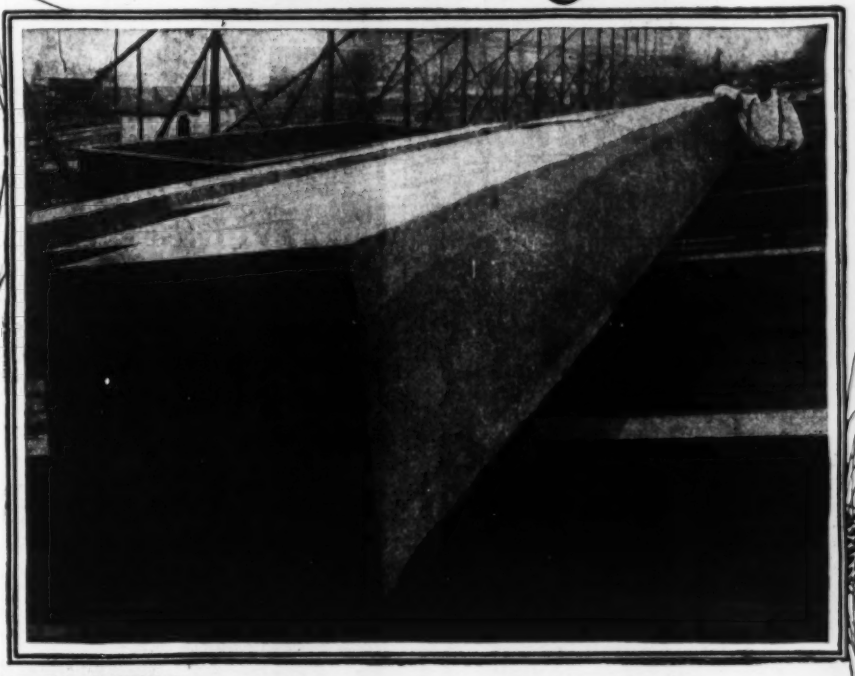

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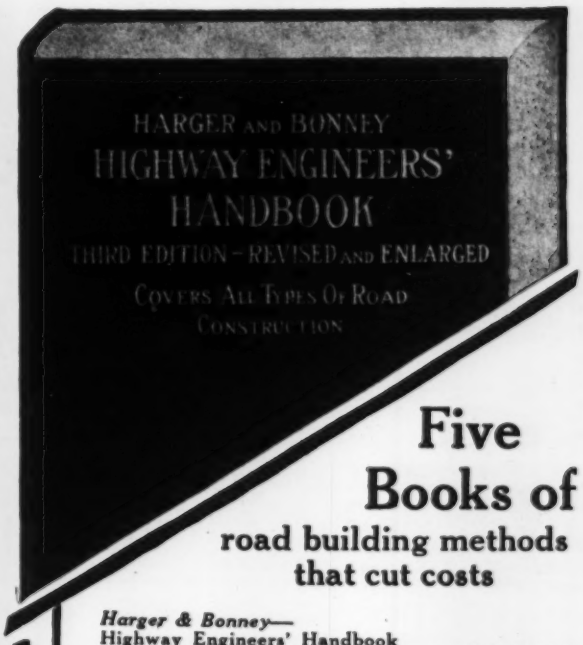
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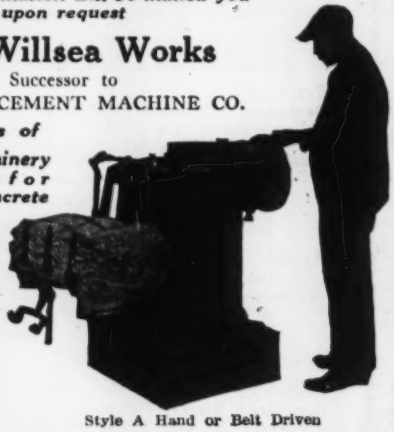

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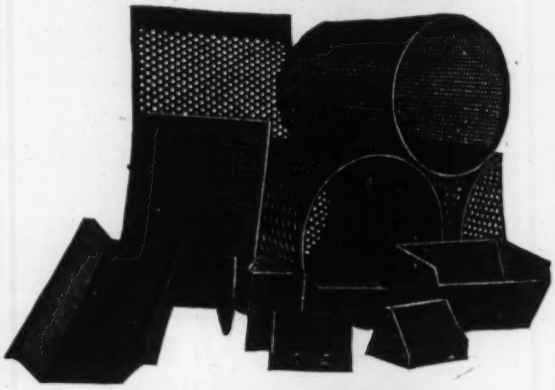

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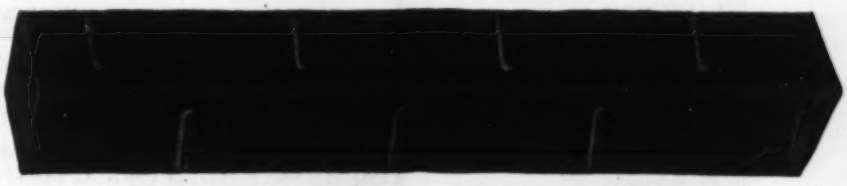

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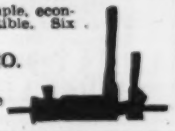

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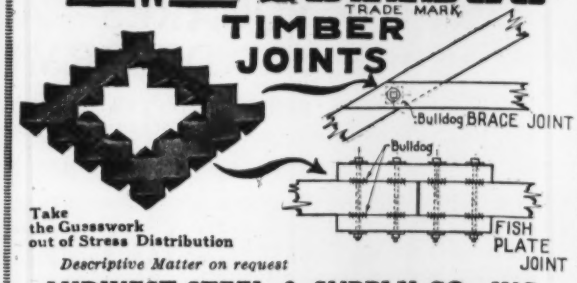

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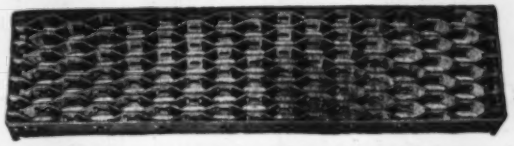

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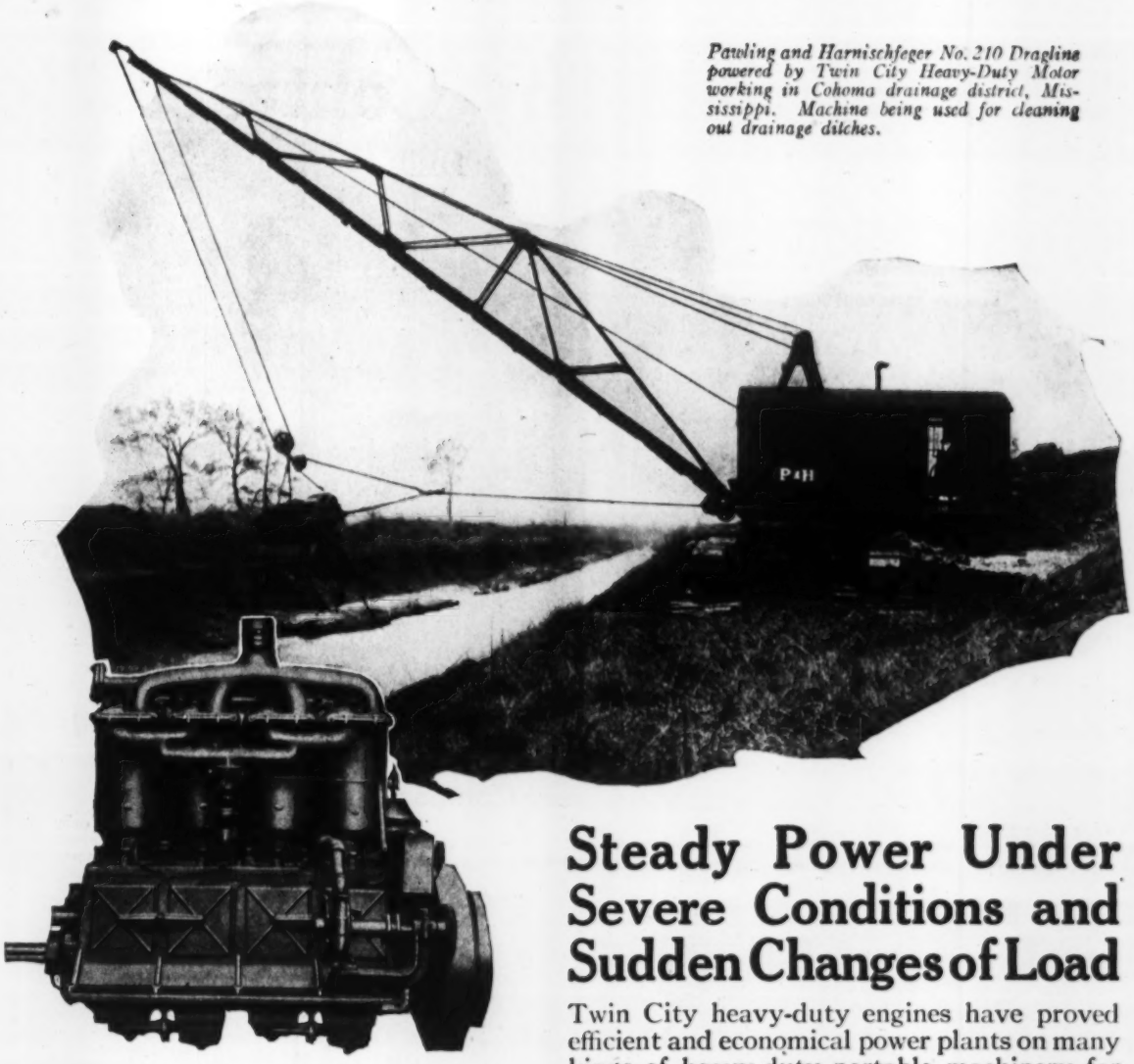

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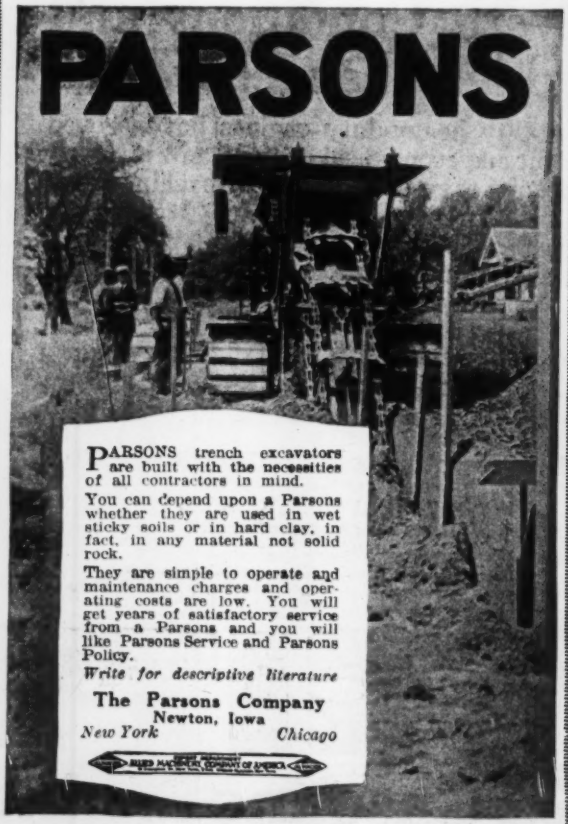

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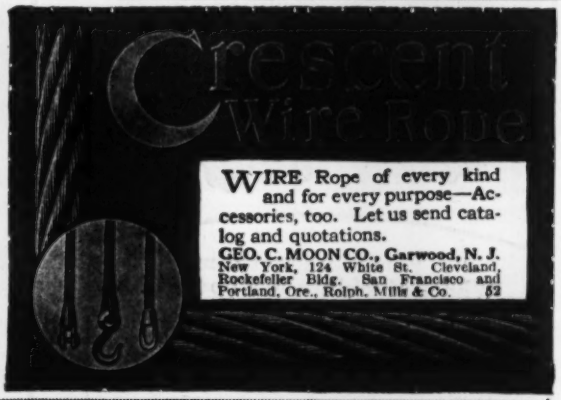

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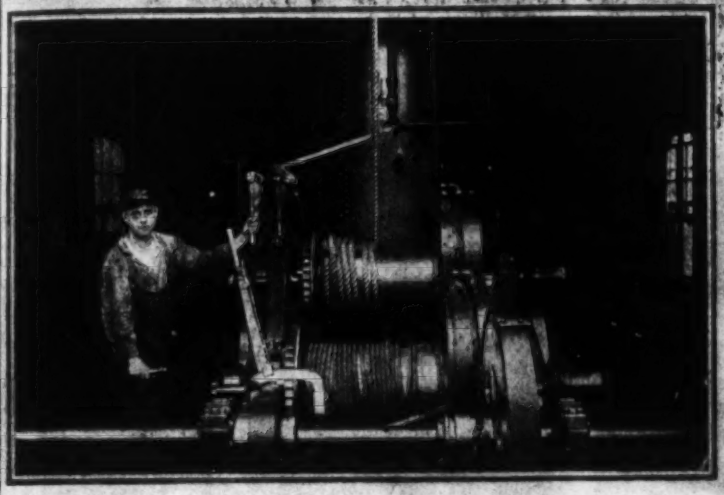

Illustration shows pile driver at work on piers for Beard's Estate at Erie Basin, Brooklyn, N. Y.

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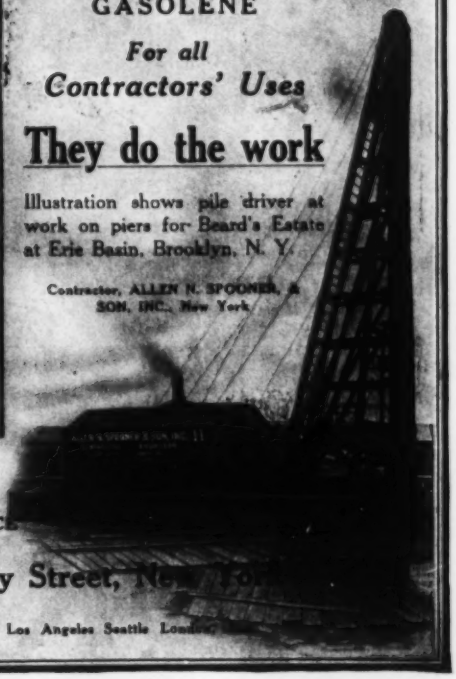

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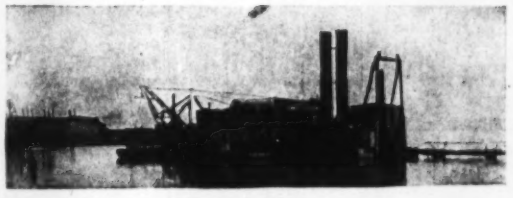

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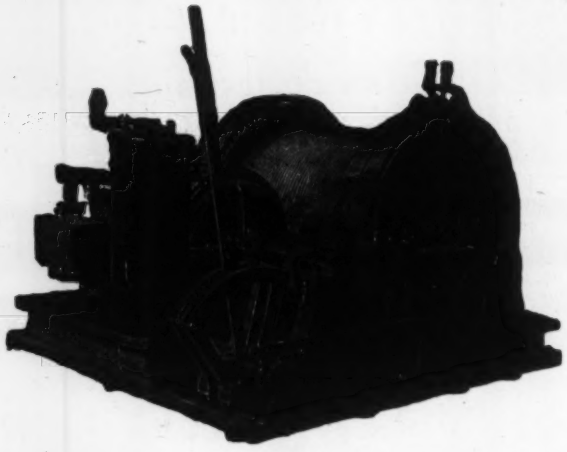

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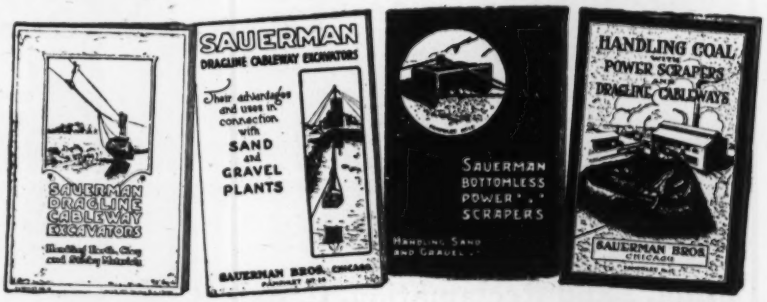

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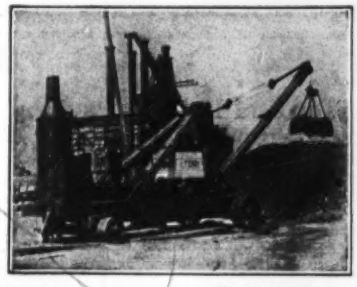

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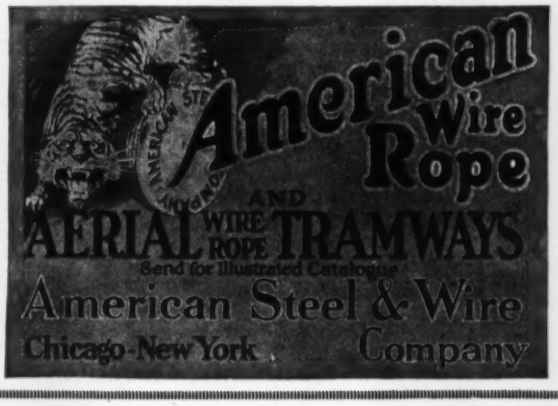

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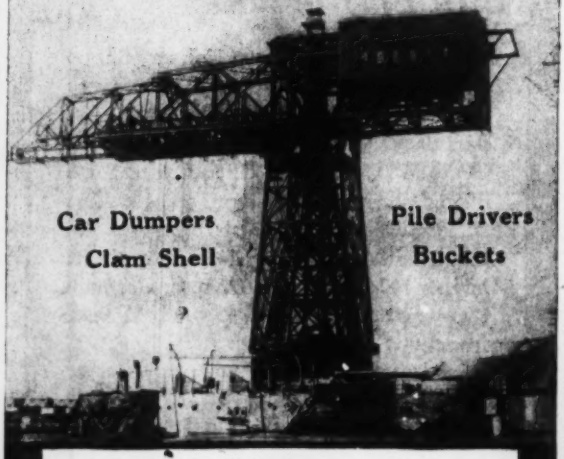

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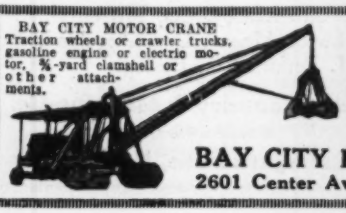

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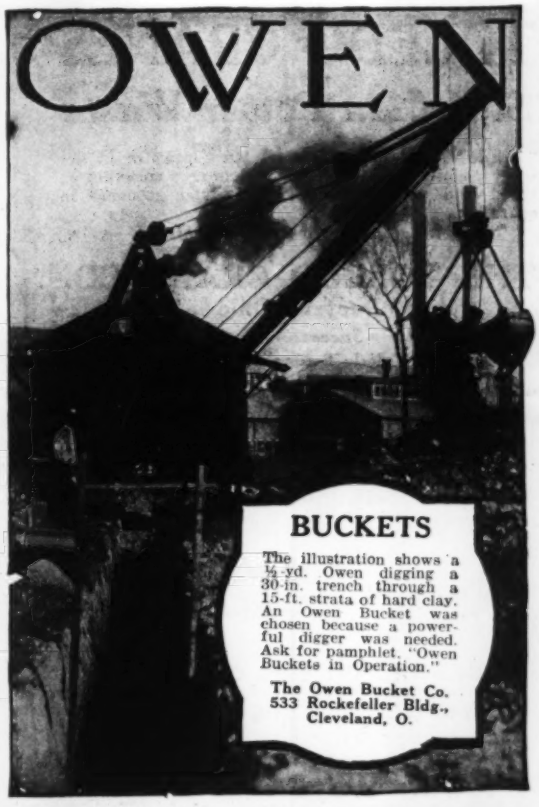

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The illustration shows a ½-yd. Owen digging a 30-in. trench through a 15-ft. strata of hard clay. An Owen Bucket was chosen because a powerful digger was needed. Ask for pamphlet, "Owen Buckets in Operation."

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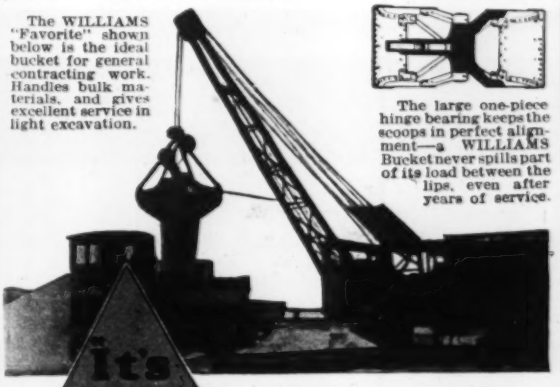
The large one-piece hinge bearing keeps the scoops in perfect alignment—a WILLIAMS Bucket never spills part of its load between the lips, even after years of service.



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"We have never used any bucket that equals the WILLIAMS,"

Writes Clarence E. Palmer, of R. H. Evans & Co., Columbus, Ohio.

The combined speed and power of the WILLIAMS "Favorite" makes it the ideal bucket for handling sand, crushed stone, coal, etc. The tremendous leverage of the WILLIAMS power arm gives an unusually rapid and positive closing action.

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OPERATOR can raise or lower the boom *under absolute control* while lifting or dropping bucket, rotating, or traveling. Exclusive Byers feature; many other points just as important—study them *all* in interesting Bulletin, just out.

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are so constructed that the counterweight does not come in contact with material, thereby insuring a greater digging power and absolutely no loss of power at any stage of the closing action. *Write for further information.*

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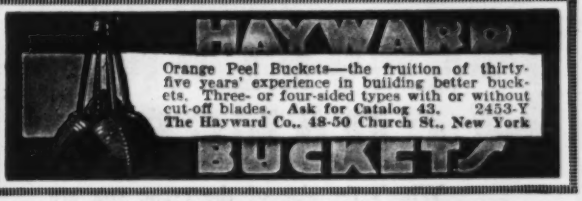

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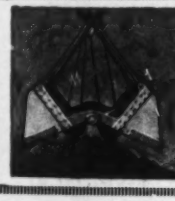

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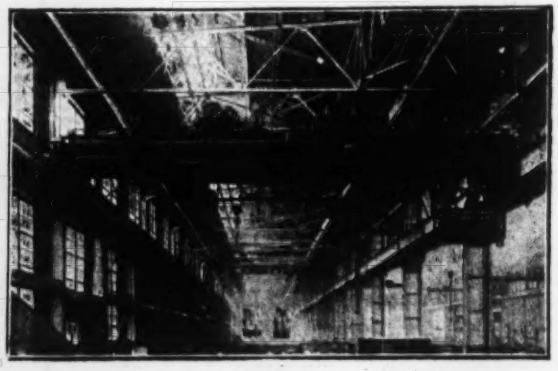

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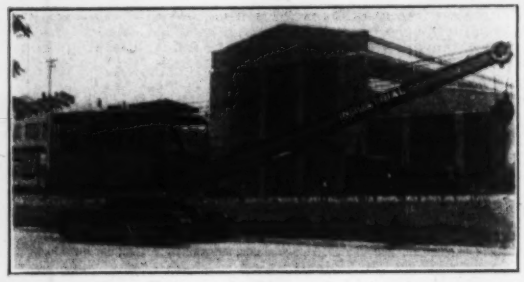

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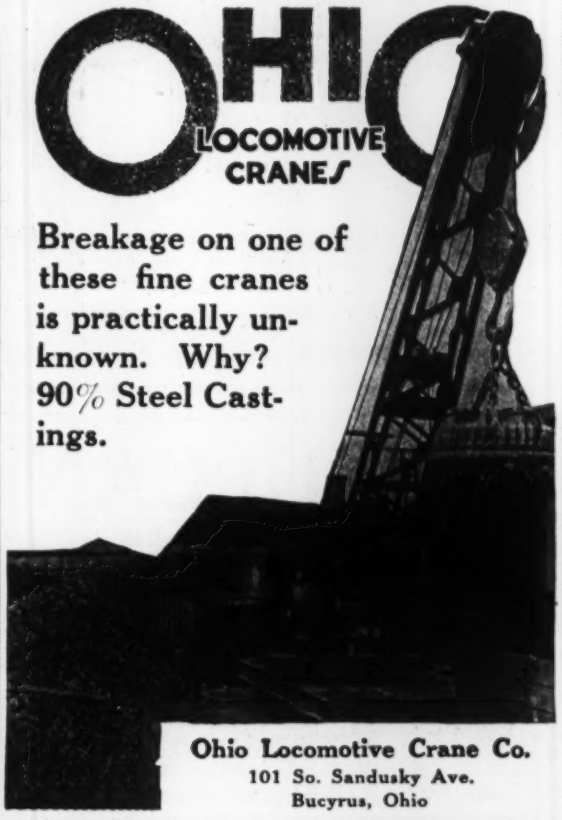
Locomotive Erection and Wrecking Cranes, 5 to 160 tons capacity. Pile Drivers, Pillar Cranes, Transfer Cranes, Rail Saws, Grab Buckets.

OHIO LOCOMOTIVE CRANES



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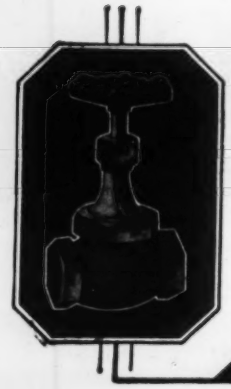

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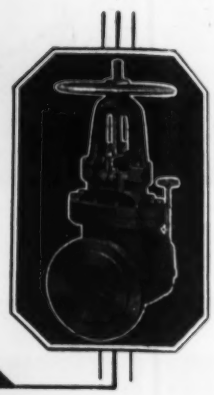

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The Hersey Disc Meter, Model HF, is the product of thirty-five years of experience and refinement in the manufacture of water meters.

This model in the smaller sizes, together with Model HD in the larger sizes, form a series which excels all meters of all makes in all those essentials which go toward making up an exceptionally desirable meter.

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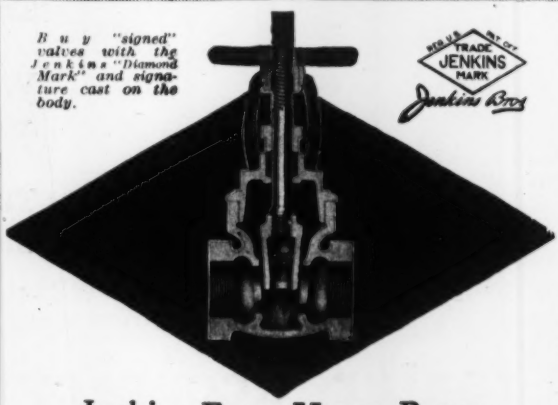

Jenkins Extra Heavy Brass Gate Valves

Fig. 282

Sectional view Fig. 282, outside screw and yoke, rising spindle. These valves are very heavy are suitable for steam and water service of all kinds under heavy pressures and high temperatures. Especially adapted for service in modern high pressure power plants. Suitable 250 pounds steam and 400 pounds water, working pressures.

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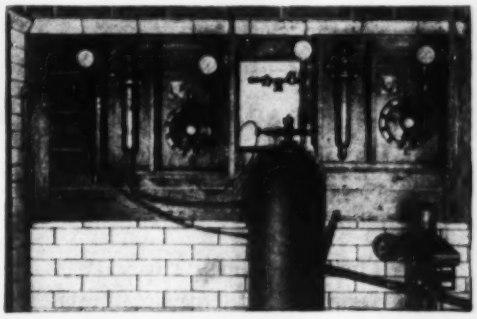
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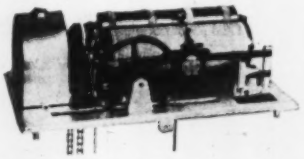

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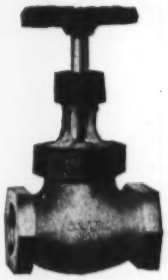

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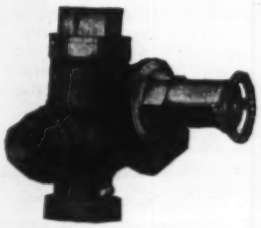

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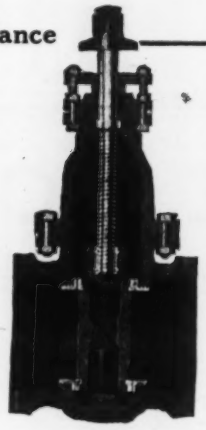
the Story at a Glance

Ludlow Double Gate Valves



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THE WHITE STAR VALVE

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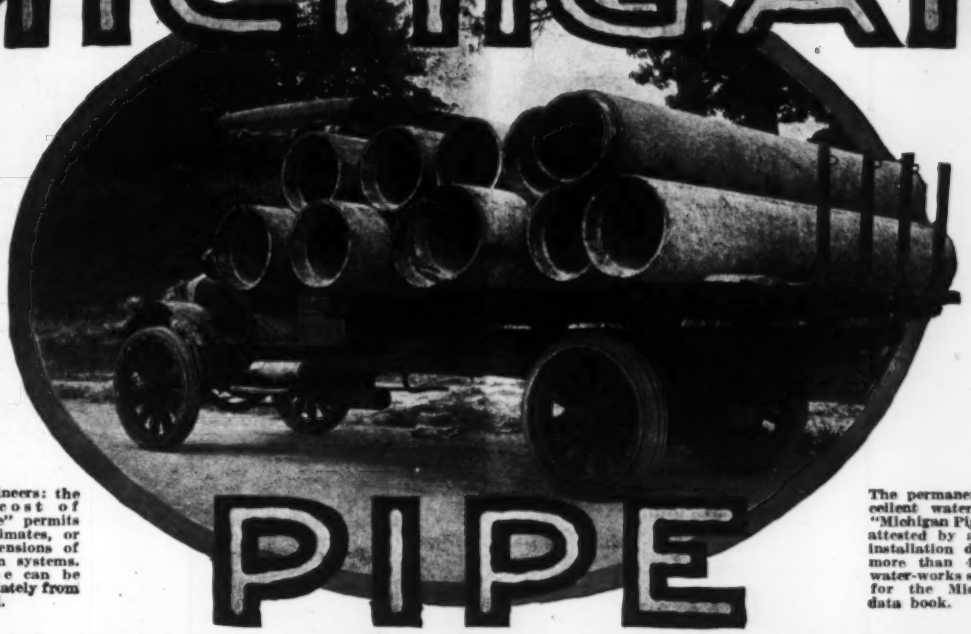

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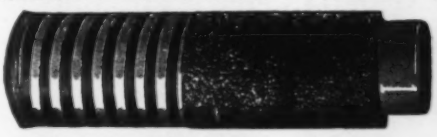

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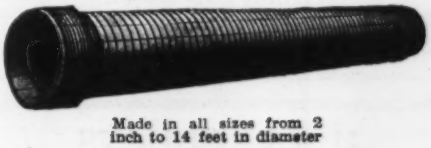

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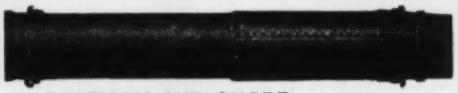

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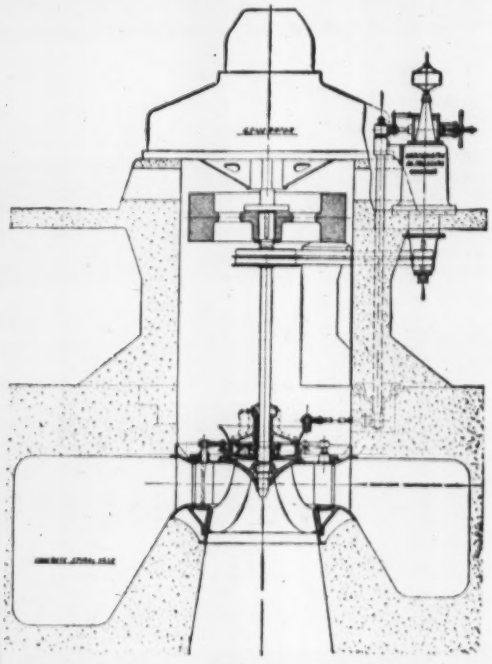

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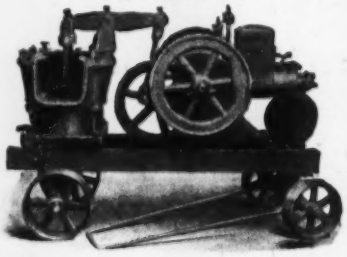

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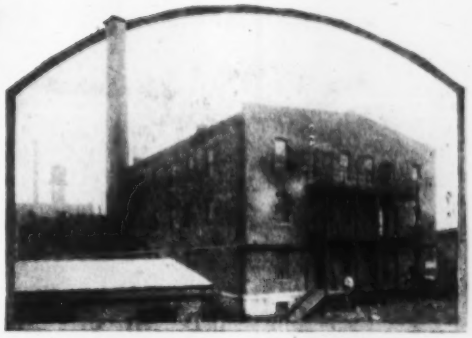

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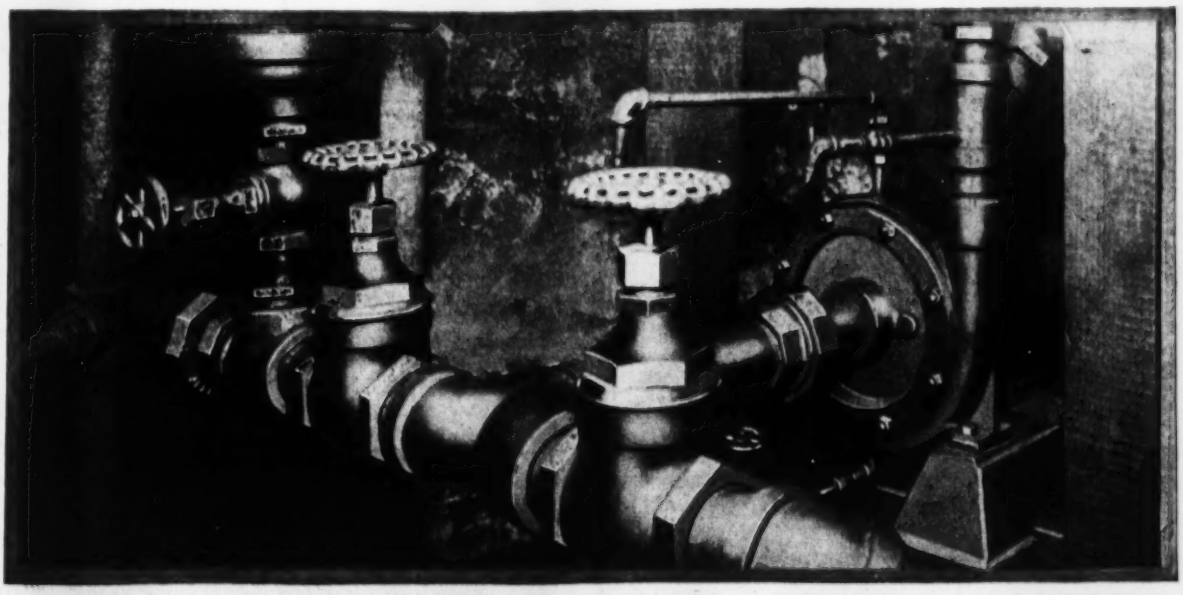

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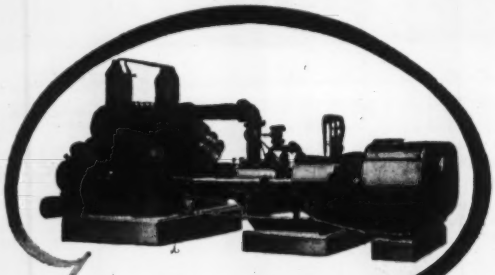

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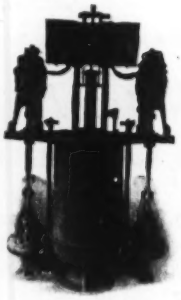

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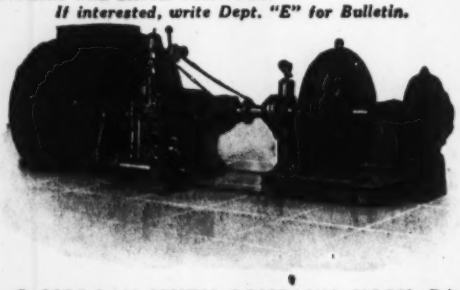

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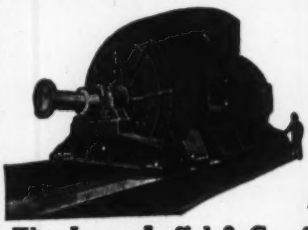

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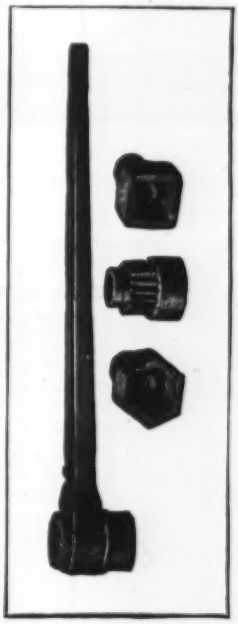

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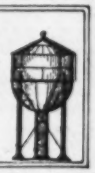

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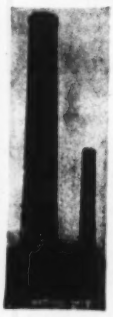

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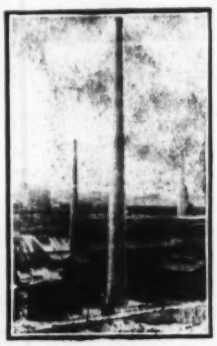

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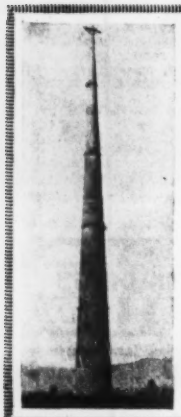

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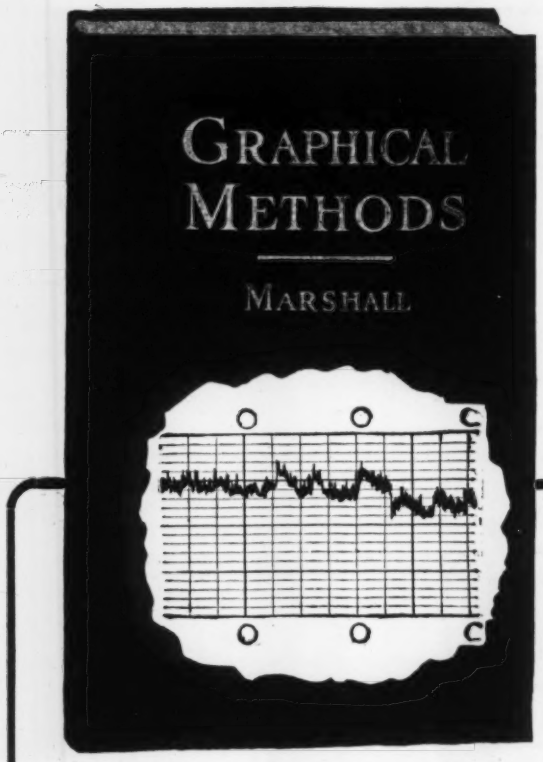

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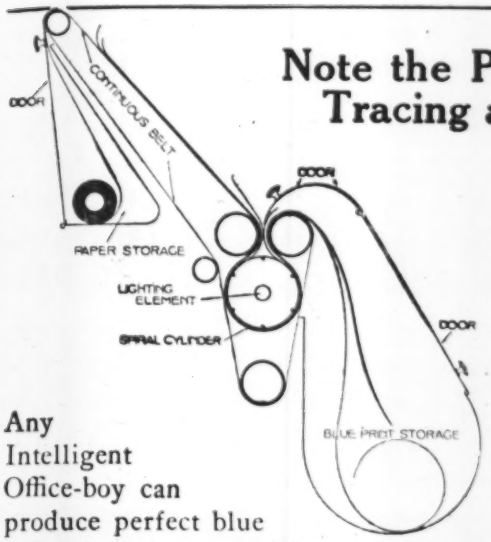

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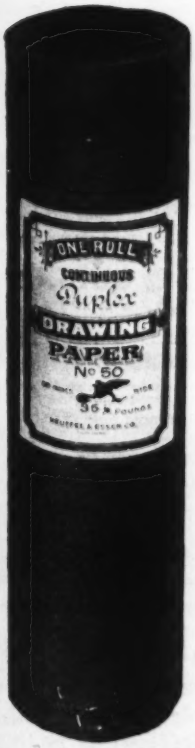

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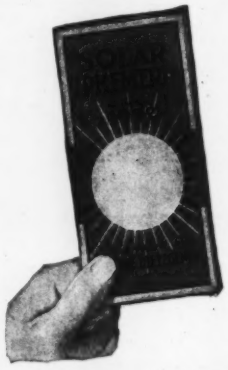

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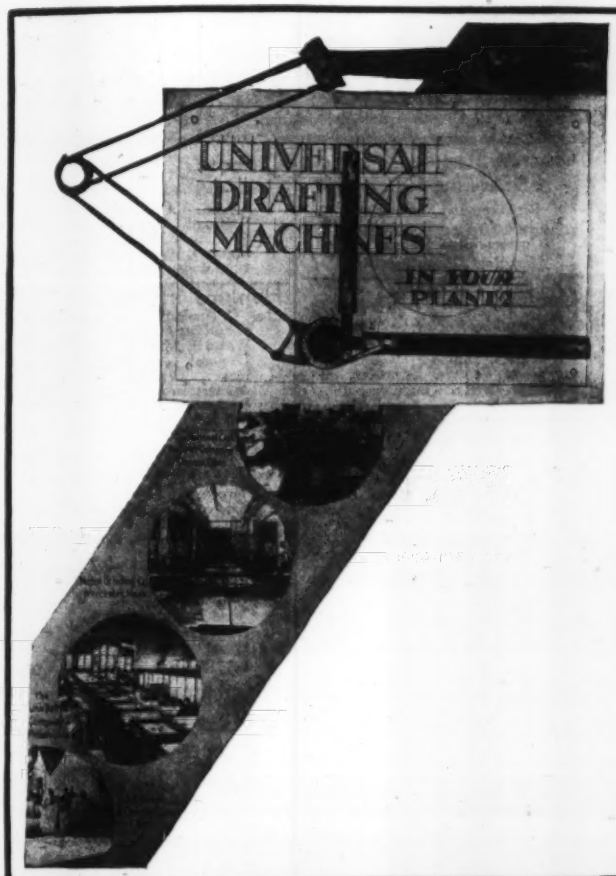

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See Last Page for Alphabetical Index

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De Laval Steam Turbine Co.
Ingersoll-Rand Co.
McKiernan-Terry Drill Co.
Sullivan Machinery Co.
Westinghouse Traction Brake Co.
Worthington Pump & Machinery Corp.

Compressors, Air, Portable
Cement-Gun Co.
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Concrete Bond
Living-Stone Co., The

Concrete Floor Hardener
Anti-Hydro Waterproofing Co.
General Chemical Co.
Sonneborn Sons, Inc., L.

Concrete Making Machinery
Willsea Works, The

Concrete Reinforcement
American Steel & Wire Co.
Brown Hoisting Machy. Co.
Buffalo Steel Co.
Concrete Steel Co.
Consolidated Expanded Metal Co.'s
Hydraulic Steelcraft Co.
Keystone Gypsum Fireproofing Co.
Lackawanna Steel Co.
Midwest Steel & Supply Co.
Mitchell-Tappen Co.
Northwestern Expanded Metal Co.
Ryerson & Son, Joseph T.
Wickwire-Spencer Steel Corp.

Condensers
Ingersoll-Rand Co.
Manistee Iron Wks.
Worthington Pump & Machinery Corp.

Conveyors, Belt
Haiss Mfg. Co., Inc., Geo.
Jeffrey Mfg. Co.
Link Belt Co.
Robins Conveying Belt Co.
Smith Engineering Co.
Webster Manufacturing Co.

Conveyors, Bucket
Haiss Mfg. Co., Inc., Geo.
Jeffrey Mfg. Co.
Link Belt Co.
Webster Manufacturing Co.

Corner Bead Metal
Consolidated Expanded Metal Co.

Cranes, Full Circle
Terry Mfg. Co.

Cranes, Locomotive
Amer. Hoist & Derrick Co.
Ball Engine Co.
Bay City Dredge Works
Brown Hoisting Machy. Co.
Browning Co.
Byers Mach. Co.
Clyde Iron Works Sales Co.
Davenport Locomotive Wks.
Industrial Works
Link Belt Co.
McMyler Interstate Co.
Marion Steam Shovel Co.
Ohio Locomotive Crane Co.
Orton & Steinbrenner Co.
Osgood Co.
Pawling & Harnischfeger Co.
Thew Shovel Co.

Cranes, Traveling
Brown Hoisting Machy Co.
Cleveland Crane & Eng. Co.
Link Belt Co.
Pawling & Harnischfeger Co.
Toledo Crane Co.

Cranes, Wrecking
Bucyrus Co.
Industrial Works

Creosoted Blocks, Timber, Poles, Cross-Arms Lumber, etc.
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Eppinger & Russell Co.
Republic Creosoting Co.
S.P.F. Wood Preserving Co.
Wyckoff Pipe & Creosoting Co.

Creosoting
American Creosote Works
Barrett Co.
Eppinger & Russell Co.
Republic Creosoting Co.
Wyckoff Pipe & Creosoting Co.

Creosoting Oils
Barrett Co.
Northeastern Co.
Protexol Corp.
Republic Creosoting Co.

Crushers and Pulverizers
Allis-Chalmers Mfg. Co.
Jeffrey Mfg. Co.
Orton & Steinbrenner Co.
Smidth & Co., F. L.
Smith Engineering Co.
Universal Road Machinery Co.
Worthington Pump & Machinery Corp.

Culverts, Corrugated
Newport Culvert Co.

Culverts, Metal
Amer. Sheet & Tin Plate Co.
Newport Culvert Co., Inc.
U. S. Cast Iron Pipe & Foundry Co.

Culverts, Nestable & Riveted Corrugated
Newport Culvert Co.

Curb, Steel Protected
Concrete Steel Co.

Cutting Blowpipes, Oxyacetylne
Milburn Co., Alexander

Dams
Ambursen Construction Co.

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Amer. Hoist & Derrick Co.
Bay City Dredge Works
Byers Mach. Co.
Clyde Iron Works Sales Co.
Dobbie Fdry & Machine Co.
Haiss Mfg. Co., Geo.
Hayward Co.
Insley Manufacturing Co.
Lidgerwood Mfg. Co.
McMyler Interstate Co.
Mundy Hoisting Engine Co., J. S.
Terry Mfg. Co.

Disinfecting Chemicals
Electro Bleaching Gas Co.
Wallace & Tiernan Co.

Distributors, Pressure Oil
(See Road Oilers, Pressure)

Ditching Machinery
(See Excavators)

Docks and Harbor Work
Parsons, Klapp, Brinkerhoff & Douglass
Snare Corp., Frederick

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Universal Drafting Mach Co.

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Dietzgen Co., Eugene
Hamilton Manufacturing Co.
Pease Co., C. F.

Drawing Materials
Dietzgen Co., Eugene
Hamilton Manufacturing Co.
Keuffel & Esser Co.

Drawing Tables
(See Tables and Boards, Drawing.)

Dredges
Hayward Co.
Lidgerwood Mfg. Co.
Marion Steam Shovel Co.
Osgood Co.

Dredges, Dipper
Austin Machinery Corp.
Bucyrus Co.
Osgood Co.

Dredges, Hydraulic
Atlantic Gulf & Pacific Co.
Bucyrus Co.
Marion Steam Shovel Co.
Morris Machine Co.

Drills, Core
Ingersoll-Rand Co.
McKiernan-Terry Drill Co.
Sullivan Machinery Co.

Drills, Rock
Chicago Pneumatic Tool Co.
Jeffrey Mfg. Co.
Ingersoll-Rand Co.
McKiernan-Terry Drill Co.
Sullivan Machinery Co.

Porter Fireless Locomotives

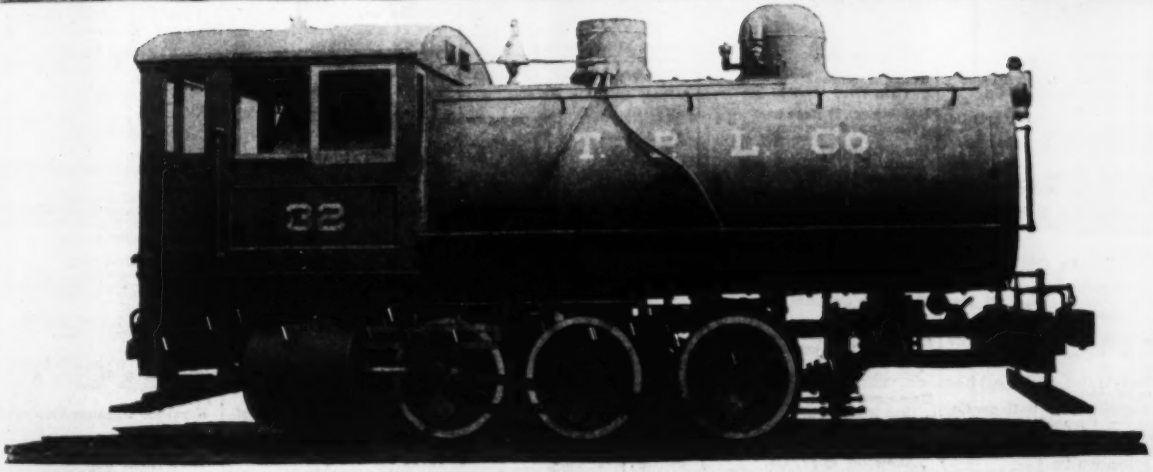
Made For A Definite Purpose

The PORTER Fireless Steam Locomotive is offered on its merits for a wide range of shifting and similar service, for either standard or narrow gauge track, for use inside buildings, as well as outdoor use, and where the radius of operation is not excessive and where a suitable steam boiler plant is available.

The Porter Fireless Locomotive is competent to handle heavy trains and it is also ideal for use where the service is not great enough, or is too irregular, to justify the purchase of a steam locomotive of usual type.

Complete data and catalogue on request

H. K. Porter Company, Union Bank Bldg., Pittsburgh, Pa.



Drums, Holding
Blaw-Knox Co.
Haiss Mfg. Co., Inc., Geo.
Hayward Co.
Monighan Machine Co.

Dryers
Blaw-Knox Co.

Dynamite
Atlas Powder Co.

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Hendrick Mfg. Co.
Link Belt Co.
Ohio Locomotive Crane Co.
Smith Engineering Co.
Webster Manufacturing Co.

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Insley Manufacturing Co.
Smith Co., T. L.
Smith Engineering Co.

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Ridgway & Son Co., Craige

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Parsons, Klapp, Brinckerhoff & Douglass
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Smith, Hauser & McIsaac.
Spencer, White & Prentiss
Terry & Tench Co., Inc.
(See also Directory of Engineers).

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Kolesch & Co.
Leupold-Voelpel Co.
Lufkin Rule Co.

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Fairbanks, Morse & Co.
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National Hoisting Eng. Co.
Smith Co., T. L.
Wisconsin Motor Mfg. Co.

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Morris Machine Co.

Engines, Hoisting
(See Hoists)

Engines, Portable
Leffel & Co., James

Engines, Steam
Chicago Pneumatic Tool Co.

Engines Traction
Best Tractor Co., C. L.

Excavators, Cableway
Clyde Iron Works Sales Co.
Lidgerwood Mfg. Co.
Mundy Hoisting Engine Co., J. S.
Sauerman Bros.

Excavators, Ditch & Trench
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Bay City Dredge Works Co.
Bucyrus Co.
Byers Mach. Co.
Fritz & Co., Inc., W. G.
Marion Steam Shovel Co.
Osgood Co.
Parsons Co.
Pawling & Harnischfeger Co.
Thew Shovel Co.

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Austin Machinery Corp.
Bay City Dredge Works
Bucyrus Co.
Byers Mach. Co.
Hayward Co.
Marion Steam Shovel Co.
Monighan Machine Co.
Osgood Co.
Pawling & Harnischfeger Co.
Sauerman Bros.
Smith Co., T. L.

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Consolidated Expanded Metal Co.
Northwestern Expanded Metal Co.

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Atlas Powder Co.

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Worthington Pump & Machinery Corp.

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Amer. Fence Constr. Co.

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American Water Softener Co.
Graver Corporation
International Filter Co.
N. Y. Continental Jewell Filtration Co.
Pittsburgh Filter Mfg. Co.
Roberts Filter Mfg. Co.
Simplex Valve & Meter Co.
Worthington Pump & Machinery Corp.

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Delaware Clay Products Co.
Dickey Clay Mfg. Co.

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Keasbey & Mattison Co.

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(See Concrete Floor Hardener.)

Floor, Wood Block
Barrett Co.
Republic Creosoting Co.

Flooring, Fireproof
Irving Iron Works

Flumes, Iron & Steel
Blaw-Knox Co.

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M. & M. Form Clamp Co.
Universal Form Clamp Co.

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Marion Malleable Iron Wks.

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Foote Co.
Hydraulic Steelcraft Co.

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Blaw-Knox Co.

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Concrete Steel Co.
Hydraulic Steelcraft Co.

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Raymond Concrete Pile Co.
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Spencer, White & Prentis.
Underpinning & Foundation Co.

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Ramapo Iron Works

Furnaces, Annealing & Tempering
American Gas Furnace Co.

Furnaces, Gas
American Gas Furnace Co.

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Jeffrey Mfg. Co.

Gas, Chlorine
Electro Bleaching Gas Co.

Gas Producers
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Coffin Valve Co.
Caldwell-Wilcox Co.
Crane Co.
Ludlow Valve Mfg. Co.

Gauges, Loss of Head
Simplex Valve & Meter Co.

Gauges, Rates of Flow
Simplex Valve & Meter Co.

Gears
Earl Gear & Mach. Co.

Generators, Electric
Allis-Chalmers Mfg. Co.
Fairbanks-Morse & Co.

Glass, Fireproof
(See Wire Glass)

Governors, Waterwheel
Woodward Governor Co.

Graders, Road
Smith Co., T. L.
Western Wheeled Scraper Co.

Gratings, Subway
Irving Iron Works

Gravel Washing Plants
Link Belt Co.
Sauerman Bros.

Gypsum
Keystone Gypsum Fireproofing Co.

Hammers, Pneumatic
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
National Hoisting Eng. Co.

Hammers, Steam Pile
(See Pile Hammers, Steam)

Heaters, Concrete Water
Graver Corporation
Lakewood Engr. Co.

Hoists, Concrete Tower
Insley Manufacturing Co.
Lakewood Engr. Co.

Hoists, Contractors' Electric
Allis-Chalmers Mfg. Co.
Amer. Hoist & Derrick Co.
Bay City Dredge Works
Byers Mach. Co.
Clyde Iron Works Sales Co.
Dobbie Foundry & Mach.Co.
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Ingersoll-Rand Co.
Lidgerwood Mfg. Co.
Monighan Machine Co.
Mundy Hoisting Eng. Co., J. S.
National Hoisting Eng. Co.
Stroudsburg Engine Works

Hoists, Contractors' Gasoline
Gray Iron Foundry Co.
Lidgerwood Mfg. Co.
Mundy Hoisting Eng. Co., J. S.
National Hoisting Eng. Co.
Stroudsburg Engine Works

Hoists, Contractors' Steam
Allis-Chalmers Mfg. Co.
Amer. Hoist & Derrick Co.
Byers Mach. Co.
Clyde Iron Works Sales Co.
Flory Manufacturing Co., S.
Ingersoll-Rand Co.
Lansing Co.
Lidgerwood Mfg. Co.
Mundy Hoisting Eng. Co., J. S.
National Hoisting Eng. Co.
Stroudsburg Engine Works
Vulcan Iron Wks of Wilkes-Barre, Pa.

Hoists, Pneumatic
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
Stroudsburg Engine Works
Sullivan Machinery Co.

Hoppers, Concrete
Insley Manufacturing Co.
Lakewood Engr. Co.

Hose, Air
Chicago Pneumatic Tool Co.

Hydrants
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co.
Rensselaer Valve Co.
Smith Mfg. Co., A. P.
Wood & Co., R. D.

Incinerators
Power Specialty Co.

Inserts, Concrete
Concrete Steel Co.

Inspecting Laboratories
(See Directory of Engineers)

Instruments, Drawing
Keuffel & Esser Co.

Instruments, Surveying
Ainsworth & Sons, Wm.
Berger & Sons, C. L.
Buff & Buff Mfg. Co.
Gurley, W. & L. E.
Keuffel & Esser Co.
Lietz Co., A.

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Irving Iron Works
Ryerson & Son Co., Jos.
Snead Architectural Iron Works

Jacks, Lifting
McKiernan-Terry Drill Co.
Norton, Inc., A. O.

Joints, Expansion Paving
Barrett Co.
Carey Co., Philip

Joints, Filler Paving
Barrett Co.
Standard Oil Co. of N. Y.

Joints, Flexible Pipe
Central Foundry Co.
Crane Co.
U. S. Cast Iron Pipe & Foundry Co.

Lath, Expanded Metal
Consolidated Expanded Metal Co's
Hydraulic Steelcraft Co.
Mitchell-Tappen Co.
Northwestern Expanded Metal Co.

Leadite
Leadite Co., Inc., The

Lights, Contractors'
Milburn Co., Alexander

Loaders, Wagon
(See Wagon Loaders)

Locomotives, Compressed Air
Porter Co., H. K.
Vulcan Iron Wks. of Wilkes-Barre, Pa.

Locomotives, Electric
Jeffrey Mfg. Co.

Locomotives, Fireless Steam
Porter Co., H. K.

Locomotives, Gasoline
Fate Root Heath Co.
Hadfield-Penfield Steel Co.
Lakewood Engr. Co.
Vulcan Iron Wks of Wilkes-Barre, Pa.
Whitcomb Co., Geo. D.

Locomotives, Steam
Davenport Locomotive Wks.
Koppel Industrial Car & Equip. Co.
Porter Co., H. K.
Vulcan Iron Wks of Wilkes-Barre, Pa.

Locomotives, Storage Battery
Whitcomb Co., Geo. D.

Lubricants
Greene, Tweed & Co.
Texas Co.

Lumber
Exchange Sawmills Sales Co.
Lawson & MacMurray

Manhole Covers
Central Foundry Co.

Manometers
Simplex Valve & Meter Co.

Meter Boxes
Pittsburgh Meter Co.

Meter Provers
Hersey Mfg. Co.
Pittsburgh Meter Co.

Meters, Boiler Feed Water
Builders Iron Foundry

Meters, Current
Gurley, W. & L. E.

Meters, Gas and Steam
Builders Iron Foundry
Wallace & Tiernan Co.

Meters, Venturi
Builders Iron Foundry

Meters, Water, Oil, etc.
Builders Iron Foundry
Gamon Meter Co.
Hersey Mfg. Co.
Neptune Meter Co.
Pittsburgh Meter Co.
Simplex Valve & Meter Co.

Mixers, Asphalt
(See Mixers, Hot)

Mixers, Concrete
Austin Machinery Corp.
Cement-Gun Co.
Foote Co.
Knickerbocker Co.
Lakewood Engr. Co.
Lansing Co.
Smith Co., T. L.

Mixers, Grout
Austin Machinery Corp.
Lakewood Engr. Co.
Union Iron Works

Mixers, Hot
Austin Machinery Corp.

Mixers, Mortar
Austin Machinery Corp.
Knickerbocker Co.
Lakewood Engr. Co.
Lansing Co.

Mixers, Paving
Austin Machinery Corp.
Foote Co.
Lakewood Engr. Co.
Smith Co., T. L.

Motors, Electric
Allis-Chalmers Mfg. Co.
Fairbanks-Morse & Co.
Westinghouse Traction Brake Co.

Motors, Gasoline
Wisconsin Motor Mfg. Co.

Motor Trucks
(See Trucks, Motor)

Oil Lubricating
Texas Co.

Oxy-Acetylene Process
Air Reduction Sales Co.
Blaw-Knox Co.

Oxygen
Air Reduction Sales Co.

Packing, Water Pipe
Greene, Tweed & Co.
Jenkins Bros.

Paints, Graphite
National Lead Co.

Paints, Metal Protective
Barrett Co.
Carey Co., Philip
National Lead Co.
Protexol Corp.

Partitions
Keystone Gypsum Fireproofing Co.

Paving, Asphalt
Texas Co.

Paving Blocks, Creosoted Wood
See Creosoted Block Timber, Poles, Cross-Arms, Lumber, etc.

Paving Blocks, Granite
Leopold & Co., J.

Paving Brick
Dunn Wire-Cut Lug Brick Co.

Paving Joint Filler
Texas Co.

Penstocks
Blaw-Knox Co.
Lackawanna Steel Co.

Pile Drivers
Industrial Works
McKiernan-Terry Drill Co.
McMyler Interstate Co.
Union Iron Works
Vulcan Iron Works of Chicago

Pile Hammers, Steam
Industrial Works
McKiernan-Terry Drill Co.
National Hoisting Eng. Co.
Union Iron Works

Piles, Concrete
MacArthur Concrete Pile & Foundation Co.
Raymond Concrete Pile Co.

Piling, Interlocking Street
Carnegie Steel Co.
Lackawanna Steel Co.

Pipe Bends
East Jersey Pipe Co.

Pipe, Cast Iron
Amer. Cast Iron Pipe Co.
Central Foundry Co.
Fox & Co., John
Glamorgan Pipe & Fdry Co.
U. S. Cast Iron Pipe & Foundry Co.
Warren Fdry. & Mach. Co.
Wood & Co., R. D.

Pipe, Concrete
Independent Concrete Pipe Co.
Lock Joint Pipe Co.

Pipe, Corrugated
Newport Culvert Co.

Pipe Covering, Asbestos
Carey Co., Philip

Pipe Covering, Wood
Michigan Pipe Co.
Standard Wood Pipe Co.
Wyckoff & Son Co., A.

Pipe, Dredge
Machold & Riddell

Pipe Fittings
Builders Iron Foundry
Central Foundry Co.
Co.
U. S. Cast Iron Pipe & Foundry Co.
Westinghouse Traction Brake Co.

Pipe Joint Compounds (Pressure)
Leadite Co., Inc., The

Pipe, Lap Welded
American Spiral Pipe Wks.

Pipe, Lock Bar
East Jersey Pipe Co.

Pipe, Lock Joint
Lock Joint Pipe Co.

Pipe, Reinforced Concrete
Independent Concrete Pipe Co.
Lock Joint Pipe Co.
United Concrete Pipe Co.

Pipe, Riveted Steel
American Spiral Pipe Wks.
Blaw-Knox Co.
East Jersey Pipe Co.
Machold & Riddell
Petroleum Iron Works Co.
Tippett & Wood

Pipe Shoes
Marion Malleable Iron Wks.

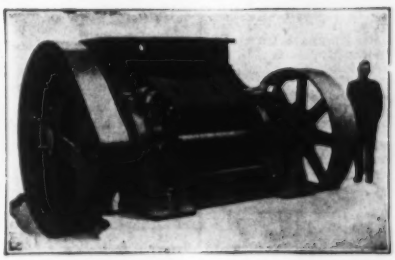
Pipe, Spiral Riveted
Abendroth & Root Mfg. Co.
American Spiral Pipe Wks.
Blaw-Knox Co.

Pipe, Vitrified Clay
Dickey Glass Mfg. Co.
Delaware Clay Products Co.

Pipe, Wood
American Wood Pipe Co.
Michigan Pipe Co.
Pacific Tank & Pipe Co.
Standard Wood Pipe Co.
Wyckoff & Son Co., A.

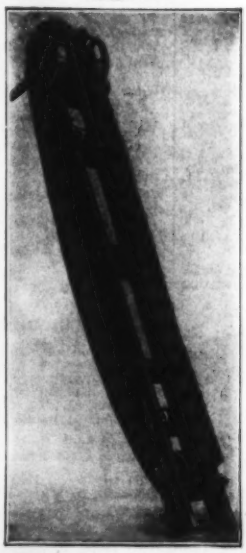
Plaster
Keystone Gypsum Fireproofing Co.

Poles, Steel Structural
Blaw-Knox Co.



UNDIVIDED RESPONSIBILITY

FOR ENTIRE CRUSHING PLANT EQUIPMENT



The many crushing plants which have been completely equipped by the Allis-Chalmers Manufacturing Company is evidenced by the satisfactory service which these plants are giving. The Allis-Chalmers Manufacturing Company takes the entire **responsibility** for the design of the plant and its equipment. These plants are built on the highest engineering standard following the best engineering practices.

Our Engineers at Your Service to make complete installation drawings.

Write for our Bulletins.

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Hydraulic Steelcraft Co.

Pulverizers
Jeffrey Mfg. Co.

Pumps, Air Lift
Chicago Pneumatic Tool Co
Ingersoll-Rand Co.
Sullivan Machinery Co.

Pumps, Boiler Feed, Steam
Earle Gear & Machine Co.
Fairbanks-Morse & Co.
Ingersoll-Rand Co.
Lea-Courtenay Co.
McGowan Co., John H.
Worthington Pump & Machinery Corp.

Pumps, Centrifugal and Multi-Stage High Lift
De Laval Steam Turbine Co.
Domestic Eng. & Pump Co.
Earle Gear & Machine Co.
Fairbanks-Morse & Co.
Gould's Mfg. Co.
Ingersoll-Rand Co.
Lea-Courtenay Co.
Manistee Iron Works
Morris Machine Works
Smith Co., T. L.
Worthington Pump & Machinery Corp.
Yeomans Brothers Co.

Pumps, Contractors'
C. H. & E. Mfg. Co.
Domestic Eng. & Pump Co.
Edson Manufacturing Co.
Ingersoll-Rand Co.
McGowan Co., John H.
Pulsometer Steam Pump Co.
Smith Co., T. L.

Pumps, Deep Well
Cook, A. D.
Domestic Engine & Pump Co.
Fairbanks-Morse & Co.
Gould's Mfg. Co.
Ingersoll-Rand Co.
Worthington Pump & Machinery Corp.
Yeomans Brothers Co.

Pumps, Diaphragm
Boston & Lockport Block Co.
Domestic Eng. & Pump Co.
Edson Manufacturing Co.
Gould's Mfg. Co.
Manistee Iron Works
Smith Co., T. L.

Pumps, Dredging and Sand
Marion Steam Shovel Co.
Morris Machine Works
Worthington Pump & Machinery Corp.

Pumps Elevator
Worthington Pump & Machinery Corp.

Pumps, Power
Cook, A. D.
Domestic Eng. & Pump Co.
Fairbanks-Morse & Co.
Gould's Mfg. Co.
Ingersoll-Rand Co.
Lea Courtenay Co.
Manistee Iron Works
McGowan Co., John H.
Worthington Pump & Machinery Corp.
Yeomans Brothers Co.

Pumps, Underwriters' Centrifugal
Allis-Chalmers Mfg. Co.
Earle Gear & Machine Co.
Lea-Courtenay Co.
Manistee Iron Works

Purifiers, Feed Water
N. Y. Continental Jewell Filtration Co.

Pyrometers
Taylor Instrument Co's

Rail and Rail Joints, Fastening & Specialties
Lackawanna Steel Co.
Rail Joint Co.

Railroad Ditchers
Ball Engine Co.
Marion Steam Shovel Co.
Osgood Co.

Railways, Industrial
Easton Car & Constr. Co.
Koppel Industrial Car & Equip. Co.
Lakewood Engr. Co.

Recorders, Water Stage
Gurley, W. & L. E.

Reinforcing Bar Couplings
Concrete Steel Co.
Marion Malleable Iron Wks.

Reinforcing Metal for Concrete Work
Amer. Steel & Wire Co.
Concrete Steel Co.
Lackawanna Steel Co.

Reinforcing, Concrete
(See Concrete Reinforcement)

River and Harbor Work
Raymond Concrete Pile Co.

Riveting Machines
Allen, John F.
Chicago Pneumatic Tool Co.

Road Oilers, Pressure
Austin Machy. Corp.

Road Oils & Preservatives
Barrett Co.
Standard Oil Co. of N. Y.
Texas Co.
Universal Road Machinery Co.

Road Rollers, Gasoline and Steam
Buffalo-Springfield Roller Co.

Rolls, Crushing
Allis-Chalmers Mfg. Co.
Jeffrey Mfg. Co.

Roofing, Metal
Amer. Sheet & Tin Plate Co.

Roofing, Prepared
Barrett Co.
Carey Co., Philip
Texas Co.

Roofing, Tile
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Keystone Gypsum Fireproofing Co.

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American Steel & Wire Co.
Leschen & Sons Rope Co.
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Roeblings Sons Co., J. A.
Wickwire-Spencer Steel Corp.

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Allison Steel Products Co.
Drouve Co., G.
Lord & Burnham Co.

Sash Steel, Window
(See Window Sash)

Saw Rigs, Portable
C. H. & E. Mfg. Co.
Industrial Works
Knickerbocker Co.

Scales
Fairbanks-Morse & Co.

Schools & Colleges
See Directory of Engineers

Scrapers, Scarifiers, Plows, Etc.
Lansing Co.
Western Wheeled Scraper Co.

Screens, Rotary
Smith Engineering Co.

Screens, Sand, Gravel and Coal
Haiss Mfg. Co., Inc., Geo.
Hendrick Mfg. Co.
Link Belt Co.
Webster Mfg. Co.
Wickwire-Spencer Steel Corp.

Screens, Water Intake
Link Belt Co.

Sewage Disinfection
Electro Bleaching Gas Co.
Wallace & Tiernan Co.

Sewage Ejectors
Yeomans Brothers Co.

Shafting
Ryerson & Son, Joseph T.

Sharpening Machines, Drill Bit
Ingersoll-Rand Co.

Sheaves
Haiss Mfg. Co., Inc., Geo.

Sheets, Iron and Steel
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Ryerson & Son, Joseph T.

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Insley Manufacturing Co.
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N. Y. Central Iron Works
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Union Iron Works
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Steel, Tool
Ryerson & Son Co., Jos. J.

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(See also Engineers' Directory).

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(See Hoists, Conc. Tower)

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Easton Car & Constr. Co.
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Transits and Levels
Ainsworth & Sons, Wm.
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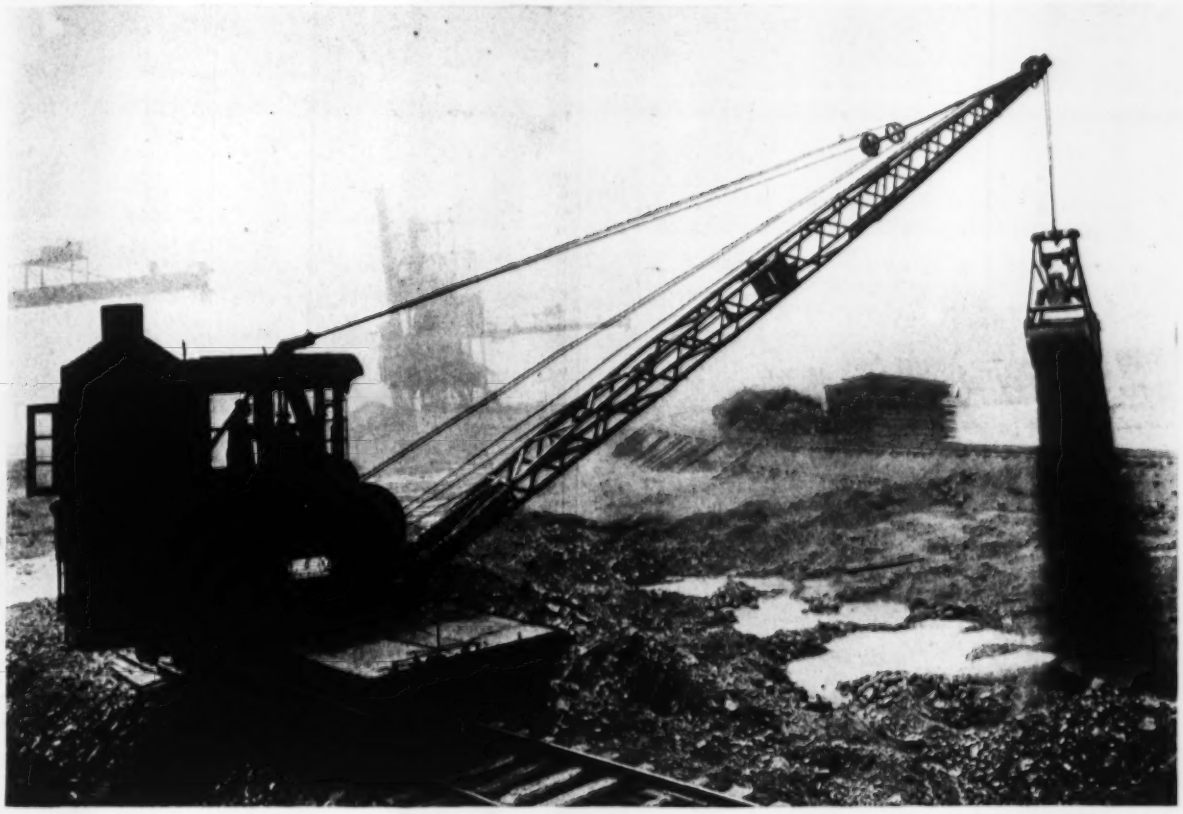
ALPHABETICAL INDEX TO ADVERTISEMENTS

	Page
Abendroth & Root Mfg. Co.	104
Advance Engineering Co., The	95
Ainsworth & Sons, Wm.	117
Air Reduction Sales Co.	111
Allen Co., John F.	112
Allis-Chalmers Mfg. Co.	125
Allison Steel Products Co.	86
Ambursen Constr. Co.	100
American Bridge Co.	113
American Cast Iron Pipe Co.	104
Amer. Cement Tile Mfg. Co.	86
American Chimney Corp.	110
American Creosote Works	82
American Creosoting Co.	82
American Fence Constr. Co.	87
American Gas Furnace Co.	111
American Hoist & Derrick Co.	93
American Sheet & Tin Plate Co.	87
American Spiral Pipe Works	104
American Steel & Wire Co.	93
American Water Softener Co.	99
American Wood Pipe Co.	103
Anti-Hydro Waterproofing Co.	85
Atlantic Gulf & Pacific Co.	91
Atlas Powder Co.	36
Austin Machinery Corp.	19
Autocar Company	42
Babcock & Wilcox Co.	111
Ball Engine Co.	11
Barrett Co.	4th Cover
Bay City Dredge Works	94
Belmont Iron Works	112
Berger & Sons, C. L.	116
Berlin Construction Co.	113
Best Tractor Co., C. L.	9
Blaw-Knox Co.	20
Boston Bridge Works, Inc.	114
Boston & Lockport Block Co.	75
Browning Co.	94
Brown Hoisting Mchy. Co.	17
Bucyrus Co.	32
Buff & Buff Mfg. Co.	117
Buffalo-Springfield Roller Co.	76
Buffalo Steel Co.	85
Builders Iron Foundry	98
Byers Machine Co.	95
C. H. & E. Mfg. Co.	86
Carey Co., Philip	76
Cement Gun Co.	14
Central Foundry Co.	104
Chapman Valve Mfg. Co.	10
Chicago Bridge & Iron Wks.	109
Chicago Pneumatic Tool Co.	8
Cleveland Crane & Engineering Co.	96
Clyde Iron Works Sales Co.	33
Coal & Iron National Bank	100
Coffin Valve Co.	38
Coldwell-Wilcox Co.	98
Concrete Steel Co.	4
Consolidated Expanded Metal Co.	86
Cook A. D.	108
Crane Co.	101
Custodis Chimney Constr. Co., Alphons	110
Davenport Locomotive Works	73
De Laval Steam Turbine Co.	106
Delaware Clay Products Co.	80
Dickey Clay Mfg. Co., W. S.	80
Dietzgen Co., Eugene	116
Dobbie Fdry. & Machine Co.	93
Domestic Engine & Pump Co.	106
Drouve Co., G.	83
Dunn Wire-Cut Lug Brick Co.	82
Earle Gear & Mach. Co.	106, 113
East Jersey Pipe Co.	105
Eastern Bridge & Structural Co.	114
Easton Car & Constr. Co.	75
Edson Mfg. Co.	106
Electro Bleaching Gas Co.	99
Eng'g Schools & Colleges	121
Engineers Directory	118
Eppinger & Russell Co.	82
Exchange Sawmills Sales Co.	81
Fairbanks-Morse & Co.	106
Fate-Root Heath Co.	73
Flory Mfg. Co., S.	92
Foote Concrete Mchy. Co.	23
For Sale Ads.	63
Fort Pitt Bridge Works	113
Fox & Co., John	98
Fritz Co., Inc.	96
Gamon Meter Co.	102
General Chemical Co.	86
General Concrete Constr. Co.	110
Glamorgan Pipe & Fdry. Co.	104
Golden-Anderson Valve Spec. Co.	37
Gould's Mfg. Co.	107
Graver Corporation	99, 109
Greene, Tweed & Co.	99
Gurley, W. & L. E.	116
Hadfield-Penfield Steel Co.	75
Haiss Mfg. Co., Geo.	15
Hamilton Mfg. Co.	116
Hayward Co.	95
Heine Chimney Co.	110
Heinicke, Inc., H. R.	110
Heller & Brightly	117
Hendrick Mfg. Co.	84
Hersey Mfg. Co.	98
Holt Mfg. Co., The	127
Hydraulic Steelcraft Co.	28
Independent Bridge Co.	114
Independent Concrete Pipe Co.	80
Industrial Works	96
Ingersoll-Rand Co.	31
Insley Mfg. Co.	29
Inspecting Engineers	121
International Filter Co.	99
Irving Iron Works	87
Jeffrey Manufacturing Co.	40
Jenkins Bros.	98
Keasbey & Mattison Co.	83
Kellogg Co., M. W.	110
Kellogg Structural Steel Co.	114
Kennedy Valve Mfg. Co.	100
Kenwood Bridge Co.	114
Keuffel & Esser Co.	115
Keystone Gypsum Fireproofing Co.	12, 13
Riesler Co., Joseph F.	95
King Bridge Co.	113
Knickerbocker Co.	24
Koiesch & Co.	117
Koppel Industrial Car & Equip. Co.	75
Lackawanna Bridge Co.	113
Lackawanna Steel Co.	34
Lakewood Engr. Co.	27
Laclede Steel Co.	85
Lansing Co.	22
Lawrence Cement Co.	84
Lawson & MacMurray	82
Lea-Courtenay Co.	106
Leadite Co., Inc.	104
Leffel & Co., James	108
Leschen, A., & Sons Rope Co.	94
Leopold & Co., J.	76
Leupold, Voe'pel & Co.	100
Lidgerwood Mfg. Co.	91
Lietz Co., A.	116
Link Belt Co.	3rd Cover
Living-Stone Co.	85
Lock Joint Pipe Co.	79
Lord & Burnham Co.	83
Louisville Bridge & Iron Co.	112
Lowell Wrench Co.	109
Lunkenheimer Co.	98
Lufkin Rule Co.	117
Ludlow Valve Mfg. Co.	102
MacArthur Concrete Pile & Foundation Co.	86
McGowan Co., John H.	108
McGraw-Hill Book Co.	7, 83, 112
McKiernan-Terry Drill Co.	88
McMyler Interstate Co.	94
M. & M. Form Clamp Co.	85
Machold & Riddell	104
Manistee Iron Works Co.	108
Marion Malleable Iron Works	92
Marion Steam Shovel Co.	16
Memphis Steel Construction Co.	109
Michigan Pipe Co.	103
Midwest Steel & Supply Co.	86
Milburn Co., Alexander	109
Milwaukee Bridge Co.	112
Minneapolis Steel & Machinery Co.	89
Mississippi Wire Glass Co.	85
Mitchell-Tappen Co.	87
Monighan Machine Co.	94
Moon Co., Geo. C.	90
Morris Machine Works	108
Morava Construction Co.	114
Mt. Vernon Bridge Co.	114
Mundy Hoisting Eng. Co., J. S.	18
Myers-Whaley Co.	78
National Hoisting Engine Co.	88
National Lead Co.	6
Nat'l Water Main Cleaning Co.	99
Neptune Meter Co.	97
Newport Culvert Co., Inc.	80
N. Y. Central Iron Works, Inc.	109
N. Y. Con. Jewell & Filt. Co.	100
Northeastern Co.	82
Northwestern Expanded Metal Co.	86
Norton, Inc., A. O.	112
Ohio Locomotive Crane Co.	96
Orton & Steinbrenner Co.	94
Osgood Co.	95
Owen Bucket Co.	95
Pacific Tank & Pipe Co.	103
Parsons Co.	90
Parsons, Klapp, Brinckerhoff & Douglass	86
Pawling & Harnischfeger Co.	90
Pease Co., C. F., The	117
Pelton Water Wheel Co.	108
Penn Bridge Co.	112
Pennsylvania Cement Co.	84
Pennsylvania Salt Mfg. Co.	100
Petroleum Iron Works Co.	109
Phoenix Bridge Co., The	114
Pittsburgh Des Moines Steel Co.	109
Pittsburgh Filter & Engr. Co.	98
Pittsburgh Meter Co.	103
Polk, Genung, Polk Co.	111
Porter Co., H. K.	123
Positions Vacant & Wanted	63
Powell Co., Wm.	102
Power Specialty Co.	111
Prest-O-Lite Co.	41
Proposals	58
Protexol Corp.	82
Pulsometer Steam Pump Co.	2nd Cover
Rail Joint Co.	75
Ramapo Iron Works	73
Raymond Concrete Pile Co.	5
Rensselaer Valve Co.	99
Republic Creosoting Co.	82
Ridgeway & Son Co., Craige	73
Riverside Bridge Co.	114
Roberts Filter Mfg. Co.	99
Robins Conveying Belt Co.	92
Roebling's Sons Co., John A.	96
Rust Engineering Co.	111
Ryerson & Son Co., Jos. T.	33
S. P. F. Wood Preserving Co.	82
Sauerman Bros.	92
Searchlight Section	58
Shoemaker-Satterthwait Bridge Co.	114
Simplex Valve & Meter Co.	102
Smidth & Co., F. L.	82
Smith Engineering Works	26
Smith Mfg. Co., A. P.	104
Smith Co., S. Morgan	108
Smith Co., T. L.	25
Smith, Hauser & MacIsaac, Inc.	86
Snare Corp., Frederick	113
Snead Architectural Iron Wks.	114
Sonneborn Sons, Inc., L.	86
Spencer, White & Prentis, Inc.	76
Standard Oil Co. of N. Y.	78
Standard Wood Pipe Co.	103
Steele & Condict, Inc.	112
Strauss Bascule Bridge Co.	114
Stroudsburg Engine Co.	91
Sullivan Machinery Co.	91
Summerhays & Sons, Wm.	110
Taylor Instrument Co.'s	102
Terry Mfg. Co.	93
Terry & Tench Co., Inc.	113
Texas Company	77
Thew Shovel Co.	35
Tippett & Wood	119
Toledo Crane Co.	6
Underpinning & Foundation Co.	86
Union Iron Works	88
United Concrete Pipe Co.	80
U. S. Cast Iron Pipe & Fdry Co.	104
Universal Clamp Co.	85
Universal Drafting Mach. Co.	117
Universal Road Machinery Co.	80
Universal Safety Tread Co.	87
Virginia Bridge & Iron Co.	113
Vulcan Iron Works of Chicago	90
Vulcan Iron Works, Inc., Jersey City, N. J.	95
Vulcan Iron Works of Wilkes Barre	30
Vulcanite Portland Cement Co.	84
Wallace & Tiernan Co.	99
Want Advertisements	63
Warren Foundry & Mach. Co.	104
Weber Chimney Co.	110
Webster Mfg. Co.	111
Western Wheeled Scraper Co.	76
Westinghouse Traction Brake Co.	76
Whitcomb Co., Geo. D.	75
Wickes Bros.	115
Wickwire Spencer Steel Corp.	92
Wiederholdt Construction Co.	110
Williams Co., G. H.	95
Willsea Works, The	84
Wisconsin Bridge & Iron Co.	114
Wisconsin Motor Mfg. Co.	21
Wood & Co., R. D.	104
Woodward Governor Co.	109
Worthington Pump & Machinery Corp.	106
Wyckoff & Son Co., A.	103
Wyckoff Pipe and Creosoting Co. Inc.	82
Yeomans Brothers Co.	108



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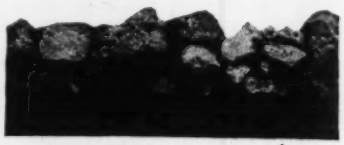

Actual photograph of a cross-section of a Barrett Specification Roof. Note the uniform Distribution of Specification Pitch between the layers of Felt.

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